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The flesh and the bones of cohesive devices: towards a comprehensive model

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ABSTRACT

Building on a 1976 model of cohesive devices, this article probes the literature on these linguistic tools with the aim of generating a comprehensive model of cohesion that can be used as an instrument for textual analysis across different text types. This article addresses two main questions: (1) what are the linguistic tools that can be incorporated into the 1976-model of cohesive devices in the creation of an operational model? and (2) what would such a comprehensive model of cohesive devices look like? The contributions of various scholars are examined to determine which elements might be considered as cohesive devices, apart from those introduced in the 1976 model. For almost all the categories within the lexico-grammar taxonomy presented in 1976, more elements are found that can play various cohesive roles in texts and that can be integrated into the 1976 model to form a more all-embracing one. To further illustrate this claim, examples from English and Arabic are used to present a new model of analysis applicable to various languages.

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Cohesive devices; text cohesion; text analysis; discourse analysis; a comprehensive model of cohesion

1. Transcription

The following transcription system will be used throughout the study.

a. Consonants
b. Vowels

Arabic letter	Transliteration	Articulatory features
ء	ʼ	Glottal, voiceless stop
ب	b	Bilabial, voiced stop
ت	t	Alveolar, voiceless stop
ث	th	Interdental, voiceless fricative
ج	j	Alveo-palatal affricate
ح	H	Pharyngeal, voiceless fricative
خ	kh	Uvular, voiceless fricative
د	d	Alveolar. voiced stop
ذ	dh	Interdental, voiced fricative
ر	r	Interdental tril

(*Continued*)

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(Continued).

Arabic letter	Transliteration	Articulatory features
ز	z	Alveolar, voiced fricative
س	s	Alveolar, voiceless fricative
ش	sh	Alveo-palatal, voiceless fricative
ص	S	Alveolar, voiceless fricative
ض	D	Alveolar, voiceless fricative
ط	T	Alveolar, voiceless fricative
ظ	Z	Interdental, voiced fricative
ع	`	Pharyngeal, voiced fricative
غ	gh	Uvular, voiced fricative
ف	f	Labiodental, voiceless fricative
ق	q	Uvular, voiceless stop
ك	k	Velar, voiceless stop
ل	l	Interdental, lateral
م	m	Bilabial, nasal
ن	n	Interdental, nasal
ه	h	Glottal, voiceless fricative
و	w	Bilabial, semivowel
ي	y	Alveo-palatal, semivowel
ة	h,t	Glottal, voiceless fricative OR Alveolar, voiceless stop

	Vowels	Symbols	Articulatory feature
Short	ـَـ	a	Low, central
	ـُـ	u	High; back
	ـِـ	i	High; front
Long	ا	aa	Low, central
	و	uu	High, back
	ي	ii	High, front

2. Introduction

Since its inception, Halliday and Hasan's 1976 model of cohesive devices has brought to the fore vigorous interest in the relations that exist among the various parts of a text. The model has been considered a seminal tool of discourse and text analysis, and has been used in a huge body of research in English and Arabic (e.g., Abdul Rahman 2013; Ali 2016; Ashouri and Ashouri 2016; Crossley, Salsbury, and McNamara 2010; Granger and Tyson 2007; Karadeniz 2017; Leo 2012; Mohamed and Mudawi 2015; Rasheed and Abid 2016; Rostami, Gholami, and Piri 2016), and is viewed as *the* model for any linguistic analysis that goes beyond the sentence level. It is worth pointing out that the 1976 model has been applied on a number of languages, including German (Krein-Kühle 2002), Portuguese (Silveira 2008), and Persian (Parazaran 2015). On a cautious note, though, the mainstream research preferred to use the English version of the model, probably to guarantee more readerships, given that English has undeniably grown as a *lingua franca* across the globe. To its credit, Halliday and Hasan (1976) model in textual analysis has been considered the most comprehensive account of cohesive devices (Moreno 2003; Xi 2010). Chen (2008) adds that the model

provides a well-developed taxonomy of cohesion. In accord with these views, Baker (2011) argues that the 1976 model is "the best known and most detailed model of cohesion available" (180).

By and large, cohesion has been classified into two major categories: grammatical cohesion and lexical cohesion. The reason behind this classification is that "cohesion is expressed partly through the grammar and partly through the vocabulary" (Halliday and Hasan 1976, 5). Grammatical cohesion is subdivided into four textual ties, which are reference, substitution, ellipsis, and conjunctions, whereas lexical cohesion involves vocabulary ties, such as reiteration and collocation. While the two main categories, grammatical and lexical cohesion, have remained unchanged since they were introduced in 1976, the subcategories, which include *reference, substitution, ellipsis, conjunctions, repetition*, and *collocation*, have undergone several changes and adaptations. These modifications to the original model of 1976 have been employed to create the instrument of the present paper and will be discussed thoroughly in the conceptual framework section.

The choice of cohesive devices as a linguistic analysis tool to investigate certain types of texts can be made for a variety of reasons. Firstly, it is cohesive devices that make a text (Bahaziq 2016) and therefore can be used as a tool to determine whether a sequence of sentences can or cannot be described as a text (Cook 2010; Hatch 1992; Thornbury 2005). Put differently, cohesive devices have the potent effect of maintaining text unity, thus creating the distinction between texts as unified wholes and disconnected sequences of sentences (Tanskanen 2006). Secondly, through cohesive devices, writers establish the logical organization and structure of information in all kinds of texts (Goldman and Murray 1989; Kuo 1995). Thirdly, cohesive devices are the only non-structural component of texts, and therefore constitute the sole instrument for non-structural, textual analysis (Halliday and Hasan 1976). Finally, cohesive devices are a fundamental linguistic tool that producers of texts use to help receivers decode, interpret, or understand their messages (Brown and Yule 1983).

The utilization of these devices, according to Halliday and Hasan (1976), will not only lead to but is also the only source of texture, the property of being a text. According to them, whenever the interpretation of a linguistic element is dependent on another, cohesion occurs. This dependency relationship is referred to as a *tie* (Halliday and Hasan 1976). A tie, therefore, refers to a single occurrence of cohesion, whether the two linguistic elements of the cohesive tie have the same referent or not. Consider the following examples where instances of cohesive ties are bold-faced:

[1] | **John** achieved the highest score in the test. **He** must have studied very well.
[2] | John's **wife** is a teacher at a community school. My **wife** is a nurse there.

In [1], *He* refers to John, and both are the same person, and in [2], *wife* is repeated, yet the referent is different. In both instances, though, a cohesive tie holds, reference in the former and lexical repetition in the second.

Although four decades have passed now since the 1976-model of cohesion was introduced, the model has never gone out of date. On the contrary, rarely does one find an analysis of cohesive devices that does not refer to Halliday and Hasan (1976) model of cohesion, and indeed many studies rely on this same model right up to the present day. However, this model is not immutable. Therefore, acknowledging the seminal contribution of Halliday and Hasan (1976) to text analysis, this paper investigates whether their model can be adapted to accommodate other contributions, if any, that could contribute further to the linguistic analysis of cohesion.

3. Purpose of the study

This paper aims to build a comprehensive model of cohesion that can be used as a discourse analysis instrument in a wide variety of texts. To do so, the present study attempts to answer the following questions:

(1) Based on the conceptual framework introduced in the present paper, what are the linguistic tools, if any, that can be incorporated into the 1976-model of cohesive devices?
(2) What would a comprehensive model of cohesive devices look like?

4. Theoretical background

The linguistic analysis of cohesive devices is essentially rooted in Systemic Functional Grammar (SFG) Theory (Halliday 1978), which suggests five ordering principles of a language: Structure, system, stratification, instantiation, and metafunction. The following subsections explain these five principles and juxtapose the key ones with other grammar theories in order to gain more insight into how SFG underpins the analysis of this paper.

4.1. *The principle of structure*

Generally, *structure* is the concept that refers to the syntagmatic order of linguistic constituents (Fromkin, Rodman, and Hyams 2007). According to SFG, a syntagm is a mere "organic configuration of elements" that gives very little about meaning (Halliday and Matthiessen 2014, 39). The following is an example of a syntagm and how it works as far as parts and functions are concerned:

[3]	**Syntagm:**	the	famous	novelist	of	Algeria
	Grammatical class:	determiner	adjective	noun	preposition	noun
	Function:	deictic	post-deictic	person	qualifier	

According to SFG, a syntagm is important because it presents an organic configuration in terms of grammatical classes and functions. Superficially, what SFG proposes about *structure* and its function does not differ substantially from what other grammar theories suggest. For example, Transformational-Generative Grammar (TGG) also identifies the organic elements of syntagms via phrase structural rules (Chomsky 1957). The grammatical classes of *A car hit the man* would be represented in the following way:

[4] |S
|NP + VP
|NP + V + NP
|Det + N + V + Det + N
|A car hit the man

SFG and TGG also agree in that the layers of a syntagm are organized by the relationship "is part of". In this respect, a morpheme *is part of* a word; a word *is part of* a phrase; a phrase is *part of a* clause.

Emphasis on syntagms in linguistic analysis was shared by other grammar theories, such as Word Grammar (WG), which holds that information about and dependencies between individual words should be the basic component of any structural analysis (Hudson 2007). Despite the similarity between SFG, TGG, and WG in acknowledging the significance of structure, these theories are very different in the way they look at the function of structure. While TGG and WG propose that linguistic analysis should not exceed the syntagm, SFG does not consider structure as the core of linguistic analysis and suggests that analysis should transcend the sentence and consider the "system" (Halliday and Matthiessen 2014).

4.2. *The principle of system*

The principle of system can be considered the hallmark of SFG. The theory defines system as "the paradigmatic ordering in language" (Halliday and Matthiessen 2014, 22). Unlike structure, system involves ordering at the vertical axis rather than the horizontal. What matters in system is what *could go instead of* what, compared to what *goes together with* what, the principal ordering pattern of structure (Martin 2004). Holding the relation of what *could go instead of* what, system is about choices made in language and is one aspect of the meaning potential of language (Halliday and Hasan 1976; Halliday and Matthiessen 2014; Menfredi 2011). As noted earlier, SFG holds that linguistic analysis must go beyond the sentence (Halliday and Hasan 1976; Johnstone 2002; Jordan 2004; Thompson and Klerk 2002). Following from this, text and its evolvement from one clause to another is one of the main foci of SFG (Gee and Handford 2011).

Although it is occasionally, but not necessarily rightly, claimed that linguistic analysis done under the umbrella of SFG has been predominantly syntagmatic (Bateman 2008), SFG maintains that both syntagmatic and paradigmatic relations

are important (Martin 2014). Halliday (2009) stresses that considering paradigmatic relations "does not mean that system is regarded as more important than structure…; it means that system is taken as the more abstract category, with structure as deriving from it" (64). At odds with SFG in this regard are a number of grammar theories which consider the sentence as the major unit – sometimes even the largest constituent (Greenbaum and Nelson 2002; Jackendoff 2002) – of linguistic analysis, and that linguistic analysis should stop *there*. TGG, for example, asserts that formal analysis is not possible beyond the sentence level (Coulthard 2014). In essence, this syntagm-and/or-paradigm variation stems from a deeper theoretical divide between syntax-only theories, represented by structure-oriented analysis of language on the one hand, and semantics-driven theories represented by structure- and system-based linguistic analysis on the other hand. To illustrate, theories that are driven by syntax, e.g., TGG, focus on structural, or syntagmatic configurations of language as the sole core of linguistic analysis (Carnie 2014; Hall 2005). At the centre of TGG lies a fundamental principle: "The notion 'grammatical' cannot be identified with 'meaningful' or 'significant' in any semantic level… [and] any search for a semantically based definition of 'grammaticalness' will be futile" (Chomsky 1957, 15). Although Chomsky's 1981 *Government and Binding* (GB) Theory addressed lexical items as the atomic units of syntax (Black 1999), syntax was still the focus of linguistic analysis. SFG, which considers both syntagmatic and paradigmatic relations in texts, is driven by semantics (Stubbs 2014), and, therefore, links grammar to meaning making as configured through systems and networks of horizontal and vertical relations among various text elements. Figure 1 summarizes the above discussion about the syntagm–paradigm theoretical divide.

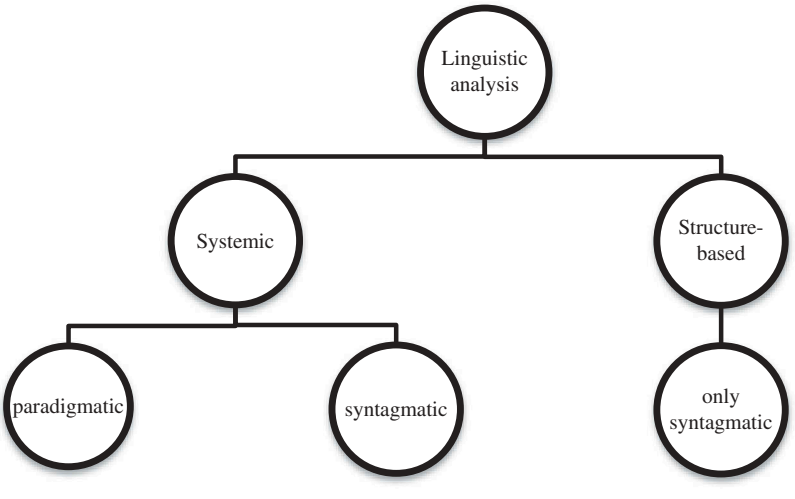

Figure 1. Systemic vs. structural linguistic analysis.

At the borderline of the syntagm/paradigm divide is the Applicative Universal Grammar Theory, which defines sentence structure as the network of syntagmatic and paradigmatic relations between sentence parts and all other expressions that can be substituted for these parts (Shaumyan 1987; Shaumyan and Segond 1994). This theoretical stand has found its way to the Arabic context as syntax and semantics were occasionally described in terms of structure and word order (Bahloul 2008; Holes 2004). This view of structure as encompassing both horizontal and vertical relations is an oversimplification of the broad divide between syntagm and paradigm on the one hand, and the underpinning distinction between syntactic orientation and semantic orientation to language on the other hand. SFG makes clear distinction between structure (sentence level) and system (text level) (Gee and Handford 2011). In order to put this within its wider context in the theory, SFG introduced the third principle, which is *stratification*.

4.3. *The principle of stratification*

According to SFG, "language can be explained as a multiple coding system comprising three levels of coding, or strata" (Halliday and Hasan 1976). The three strata are (1) semantics, which is realized by (2) the lexico-grammar, which is realized by (3) sounding/writing. Figure 2 below outlines the three strata according to SFG as adapted from Halliday and Hasan (1976).

According to SFG, semantics mediate between the context and the lexico-grammar (Teich 1999). Of particular interest to this paper is the second stratum, which is the lexico-grammar. One of the main propositions of SFG is that it considers lexis and grammar as the two ends of a single continuum, rather than two different entities. The only difference between vocabulary and grammar according to SFG is that the former expresses specific meanings and the latter expresses more general meanings (Halliday and Hasan 1976; Halliday and Matthiessen 2014). A lexicogrammar stratum can be presented in the form of a cline similar to the one in Figure 3.

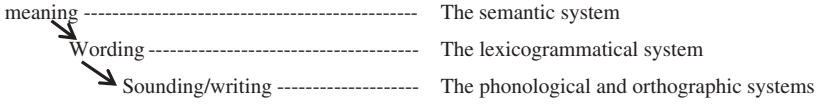

Figure 2. The three strata of language according to SFG.

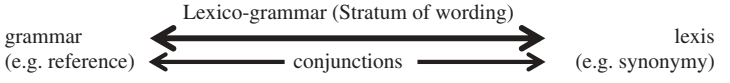

Figure 3. Lexicogrammar cline.

As far as cohesive devices are concerned, they are distributed across the lexico-grammar cline, where reference, ellipsis, and substitution are grammatical; reiteration and collocation are lexical; and conjunctions somewhere between the two. These devices, which are part of the lexico-grammar stratum, play major roles in texts' unity and organization. However, when considering the organization of language itself, the principle of *instantiation* has to be explained.

4.4. *The principle of instantiation*

According to SFG, any text is an instance of some underlying system. If someone does not know the system of the Arabic language, for example, a text written in that language may not have meaning to him/her. Halliday and Matthiessen (2014) compare system and text to climate and weather, respectively. Text is similar to weather in that it goes around us all the time affecting our daily lives, whereas system is analogous with climate since system underlies the impact of text. Halliday and Matthiessen (2014) state that "the relationship between system and text is a cline – the cline of instantiation" (27). The authors explain that while system represents the overall potential of language, text is the particular instance. Between the two there are intermediate patterns. A single text, or an instance of system, can be initially studied and then other texts that share certain criteria with it examined, describing this within text type. Looking at text type is seen as a movement along the instantiation cline from the instance pole to the system pole (Halliday and Matthiessen 2014). While the principle of instantiation is concerned with organization of language, the fifth principle of SFG is linked to the three metafunctions of language.

4.5. *The principle of metafunction*

SFG asserts that one primary function of language is to make sense of experiences, therefore construing human experience. Hence, language names and categorizes things. Language also develops categories into further taxonomies. For example, *building* is a category that includes houses, towers, schools, cottages, etc. *Animal* is another category that includes camels, lions, and so on. In Arabic, taxonomies can be categories of their own as well because they can be broken down into further taxonomies. For example, جمل/jamal/, meaning *camel*, which is a taxonomy of حيوان/Hayawaan/, meaning *animal*, can become a category in its own right as there are approximately a 100 sub-types for this animal in Arabic. Table 1 provides some examples of camel taxonomies in Arabic.

According to SFG, the language function that involves construing human experience is called *ideational*. The second function of language is the

Table 1. Camel categories/taxonomies in Arabic.

The category/taxonomy of *camel* in Arabic	
Arabic name	Meaning in English
جمل/jamal/	Male camel
ناقة/naaqah/	Female camel
كوماء/kawmaa'/	Camels with long humps
الغيهب/alghayhab/	Camel with dark colour
العيغص/almighS/	White camels

interpersonal, which involves "enacting our personal and social relationships with the other people around us" (Halliday and Matthiessen 2014, 29). This function of language entails that a clause of grammar exceeds being a representation of some process as it also entails some kind of function, such as offering, expressing opinion, and informing, to name but a few. Akin to this view of the interpersonal metafunction of language, Bonyadi (2011) and Fowler (2003) maintain that language does not allow its users to say something without conveying some kind of attitude, or point of view towards what is being said.

The above two functions, construing experiences and enacting interpersonal relationships, call for a facilitating function, hence the *textual* function of language. This function enables the other two to construct sequences of discourse, organize the flow of ideas, and create cohesion (Halliday and Matthiessen 2014). The textual function of language is divided into structural, or syntagmatic, and non-structural, or paradigmatic, components. Cohesive devices, the focus of the present paper, are pinned into the non-structural component of the textual function of language as illustrated by SFG. In a nutshell, Halliday and Hasan (1976) explain that the ideational component of language expresses content, whether it is experiential or logical, that the interpersonal component represents the speaker's attitudes and judgments, and that the textual component represents the forming of the text in the linguistic system. The time is probably ripe at this stage to illustrate the conceptual framework of cohesion, which will be utilized to build the new model of cohesion.

4.6. *Conceptual framework of cohesion*

The conceptual framework of the studies reviewed in this paper serves two main purposes. Firstly, it explains the concepts that constitute the core elements of the comprehensive model of analysis suggested by this study. Secondly, it highlights the developments and adaptations that have taken place since the 1976 model of cohesive devices was first introduced. According to Halliday and Hasan (1976), cohesion "…refers to relations of meaning that exist within the text, and that define it as a text" (4). The following conceptual framework of cohesive devices is primarily discussed in

light of Halliday and Hasan (1976) lexico-grammatical model. The authors have identified five main categories of cohesion that can be grouped under grammatical cohesion (reference, substitution, and ellipsis), lexical cohesion (reiteration and collocation) and partly grammatical, partly lexical cohesion (conjunctions). The following review discusses all these categories and all the adaptations and additions that they have undergone since 1976.

4.7. *Reference*

According to Halliday and Hasan (1976), *reference* involves the use of textual elements that cannot be decoded in their own right. The authors identify personals, demonstratives, and comparatives as examples of this category. They explain that these items fall within two broad reference types, *exophoric* and *endophoric*. The latter, according to them, can be further divided to *anaphoric* and *cataphoric*. Figure 4 is a rough representation of these categories.

According to Widdowson (2004), ***exophoric*** reference looks outside the text to decode the identity of the linguistic item being referred to. Consider the following example:

The two referring items, *The* and *there*, in [5] cannot be decoded except by going outside the text to consider the specific context, or the shared world between the speaker/writer and the hearer/reader. It is immediately clear, though, that Halliday and Hasan's model addresses *exophoric* reference as exclusively situational, and context specific. However, *exophora* quite often extends beyond the situation to encompass society and culture. Therefore, Paltridge (2012) introduces *homophoric* reference, "where the identity of the item can be retrieved by reference to cultural knowledge, in general, rather than the specific context of the text" (116). Following is an example from Arabic:

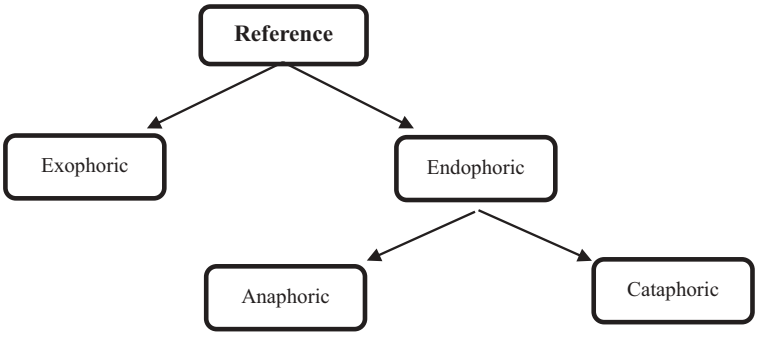

Figure 4. Types of reference (Halliday and Hasan 1976).

[5] |**The** three boys went **there** together.

[6]	|العراقية |/al`iraaqiyyah/ |Iraqi	التشوبي /atshuubi/ Chobi	طريقة /Tariiqat/ way	على /`alaa/ on	أيديهم /'aydiihim/ their hands	شبكوا /shabakuu/ put together

In [6] it is not possible to decode the referent of *the* Iraqi Chobi without knowledge of the Iraqi culture, particularly in this instance that the Chobi is a folkloric Iraqi dance, usually performed in weddings and particular celebrations. Since this decoding process requires knowledge of culture, rather than the specific context of the statement, reference is *homophoric*.

Figure 5 presents the adapted types of reference based on Halliday and Hasan (1976) and Paltridge (2012).

Endophoric reference, on the other hand, involves ties within the text and can be *anaphoric*, where the interpretation of the linguistic item involves moving back, or *cataphoric*, where decoding the reference calls for a forward movement in the text (Halliday and Hasan 1976). Consider the following examples:

In [7] all the boldfaced referring items are instances of *anaphora* since they can only be interpreted by going *back* in the text, whereas in [8] *He* is *cataphoric* because its interpretation involves moving *forward* in the text.

Cutting (2008) adds that *endophora* can be represented in terms of *associative*, co-textual relations in addition to the direct *anaphoric* and *cataphoric* representations. By way of elaboration, Cutting (2008) introduces the following example (10):

In example [9], in order to infer that video sharing, meaning public viewing online, is NOT physically passing DVDs to friends, readers have to rely on their knowledge of the "presuppositional pool of 'website'" (Cutting 2008, 10). *Associative endophora*, then, entails that a noun phrase is linked to entities that are associated with another noun phrase in the same text. Since this type of

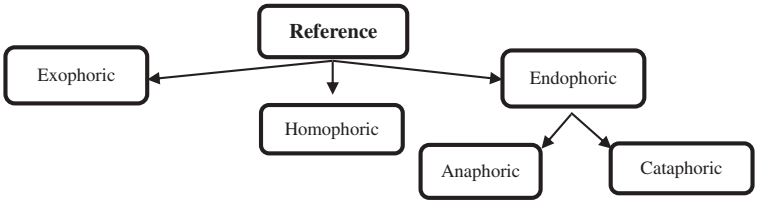

Figure 5. Types of reference .

[7] |Linda finished **her** research project. **She** had worked day and night to finish **it** on time.

[8] |**He** had no choice. John worked hard and finished the project.

[9] |Youtube is a popular **video sharing** website where users can upload, view and share video clips.

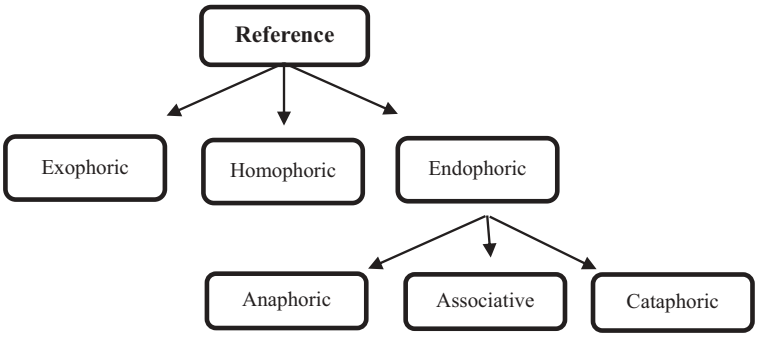

Figure 6. Types of reference (Halliday and Hasan 1976; Cutting 2008; Paltridge 2012).

endophora was not introduced in the 1976 model of cohesion, it will be added to the model that will be developed in this paper. Figure 6 incorporates this adaptation.

Halliday and Matthiessen (2014) divide reference expressions into two major groups: co-reference, where what is presupposed is the same referent, and comparative reference, where the presupposed is another referent of the same class. Personal and demonstrative pronouns are examples of co-reference, whereas comparative adjectives and adverbs are examples of comparative reference.

In Arabic, all the above categories of reference hold; nevertheless, English and Arabic are very much different in their linguistic structures and textual features (Alfadly and Aldeibani 2013), which is conspicuous in the number of personal pronouns in both languages (Wightwick and Gaafar 2005). While English, for example, has 7 subject pronouns, Arabic has 14. Table 2 illustrates the categories of subject pronouns in both languages.

Even a cursory glance at Table 2 will confirm the observation made by Wightwick and Gaafar (2005, 15) that: "Arabic has more pronouns than English since it has different versions for masculine and feminine, singular and plural, and even special dual pronouns for two people or things." It is immediately

Table 2. Subject pronouns in English and Arabic.

English subject pronoun	Corresponding Arabic pronoun(s)	Meaning of the Arabic pronoun
I	أنا/ʼanaa/	First person singular
We	نحن/naHnu/	First person plural
He	هو/huwa/	Third person singular masculine (people)
She	هي/heya/	Third person singular feminine (people)
It	هو/huwa/	Third person singular masculine (things)
	هي/heya/	Third person singular feminine (things)
You	أنتَ/ʼanta/	Second person singular masculine
	أنتِ/ʼanti/	Second person singular feminine
	أنتما/ʼantuma/	Second person dual masculine and feminine
	أنتم/ʼantum/	Second person plural masculine
	أنتن/ʼantunna/	Second person plural feminine
They	هم/hum/	Third person plural masculine
	هن/hunna/	Third person plural feminine
	هما/humaa/	Third person dual masculine and feminine

clear from Table 2 that *it* has two functionally corresponding pronouns in Arabic, *you* five, and *they* three. The bigger number of Arabic personals does not mean that identifying referential ties in Arabic is more complicated than in English since in both languages the referent of the pronoun can be decoded exophorically, homophorically, or endophorically. Still, the above set of personal pronouns contains a major difference between the two languages as far as this type of tie is concerned. This difference will be delineated in the following sections.

4.8. *Ellipsis*

Ellipsis is a cohesive device that involves the omission of linguistic items which can be retrieved from another clause (Hoey 2001). Because of the omission feature, "ellipsis can be thought of as a 'zero' tie because the tie is not actually said" (Hatch 1992, 225), yet something is presupposed by means of what has been expunged (Halliday and Matthiessen 2014). The 1976 model of cohesion identified three types of ellipsis, which are *nominal, verbal*, and *clausal*, a categorization that has been broadly acknowledged by a number of authors and researchers (e.g., Jabeen, Mehmood, and Iqbal 2013; McCarthy 1991). Following are examples that represent the three categories of ellipsis:

In [10], the ellipsis is nominal since the deleted item is the noun fault. [11] is an example of a verbal ellipsis with part of the verb deleted, and finally, [12] is an instance of clausal ellipsis since the entire clause that normally follows *Yes* in such answers is deleted. As for Arabic, all the three types of ellipsis exist, yet with some difference vis-à-vis nominal ellipsis, which is not common in Arabic except when the subject of the sentence is dropped in certain cases, which will be discussed later when talking about Arabic as a pro-drop language. As for verbal ellipsis, [11] can be translated to Arabic maintaining the verbal ellipsis as follows: تستطيع أنها متأكد أنا .ذلك تفعل أن تستطيع/tastaTii`u 'an taf`ala dhaalik. 'anaa muta'akkidun 'annahaa tastaTii`/, deleting أن تفعل ذلك/'an taf`ala dhaalik/, which is equivalent to "do it" in [11]. The clausal ellipsis instance in [12] can also be rendered as is in Arabic as follows: وصل هل؟ أجل/hal waSala? 'ajal/, thus crossing out the same parts deleted in English.

Despite the agreement on the three broad categories of ellipsis, a number of issues have emerged regarding this cohesive device. One of those issues is whether ellipsis is always anaphoric or not. A number of researchers emphasize that ellipsis can be merely described in terms of anaphora because the omitted item(s) can only be retrieved by moving backward in the text (Halliday and Hasan 1976; Halliday and Matthiessen 2014), like the movement done in [10],

[10] |It wasn't Dexter's fault, her anger. It was her own. (From Pavone's *The Expats*, 141)

[11] |She can do it. I am sure she can.

[12] |Has he arrived? Yes.

[11], and [12] above. In accordance with this claim, Crystal (2006, 43) maintains that ellipsis "can be recovered only from the preceding discourse." However, Jones (2012) and McCarthy (1991) confirm that English *does* have cataphoric ellipsis; McCarthy (1991) provides the following example (43):

Retrieving what has been omitted after *could* requires a forward movement. Accordingly, ellipsis can be used cataphorically in front-placed subordinate clauses. In Arabic, ellipsis can be described in terms of cataphora, too. The following is an example from Arabic; the English word-for-word translation is also provided.

The Arabic statement in [14] is functionally equivalent in English to *it was not my decision, moving to the new house*. In order to retrieve the speaker's decision, one needs to move forward in the text, which makes this statement an example of cataphoric ellipsis.

Ellipsis was subject to further investigation when Thomas (1987) added more details to the category of verbal ellipsis by further dividing it into two types as far as form is concerned: echoing and auxiliary contrasting. While the former involves using part of the verbal phrase that is just before the omitted part, the latter involves changing the grammatical set of the auxiliary verb into another. The following are examples of echoing and auxiliary contrasting presented, respectively, in [15] and [16]:

As far as Arabic is concerned, it differs from English in that it is a pro-drop language, which means that the subject pronoun can be deleted because Arabic's rich verbal morphology allows for this, in what is sometimes referred to as zero anaphora (Ryding 2005). Consider the following example:

It is immediately clear that *he*, the subject pronoun, of the verb *visits* is dropped from the Arabic text, which is still grammatically correct in Arabic. This means that in Arabic, this cohesive tie, which is the deleted-yet-retrievable subject pronoun, does not have to be physically present in the text. In English,

[13] |If you could, I'd like you to be back here at five thirty.

[14]

الانتقال إلى البيت الجديد|	ا قراري أنا،	يكن	لم
/alintiqaal 'ilaa albayt aljadiid/	/qaraari 'anaa/	/yakun/	/lam/
|Moving to the new house	my decision,	was	not

[15] |A: **Are** they moving to a new house?
|B: Yes, they **are**.

[16] |A: **Are** they moving to a new house?
|B: They already **have**.

[17]

|أكثر	يزوره	ولذلك	بجدته،	مولع	أحمد
/athiiran/	**/yazuuruhaa/**	wa lidhaalik/	/bijaddatihi/	/muula`/	/'aHmad/
|alot	**visits her**	so	of his grandmother,	fond	Ahmed

a statement like "Ahmed is fond of his grandmother, so visits her a lot" is ungrammatical, whereas in Arabic it is grammatical.

4.9. *Substitution*

Substitution is very much similar to ellipsis except that an explicit indication is given that something has been deleted (Halliday and Matthiessen 2014). Put differently, it is a structural relationship that involves the replacement of one item by another (Jabeen, Mehmood, and Iqbal 2013). Like ellipsis, substitution falls into three categories: nominal, verbal, and clausal. The following are some examples:

In [18] *one* replaces the noun *bag*, and it is, therefore, an instance of nominal substitution. [19] contains an example of verbal substitution with *do* substituting for *go to the party*. Finally, *so* in [20] replaces an entire clause, *You look tired* or *You are tired* which is why it is an instance of clausal substitution. In Arabic, the three substituting items, one, do, and so, exist at the levels of form and function, with the words واحدة/waaHida/, تفعل/taf'al/and كذلك/kad-haalika/that can function the same as the three substituting items in [18], [19], and [20], respectively. Halliday and Matthiessen (2014) maintain that *one* and *do* are the most common nominal and verbal substitution items, respectively, whereas *so* and *not* are the most common for clausal substitution. However, other words can be used to substitute. For example, McCarthy (1991) provides the following example in which *the same* is used to substitute a noun:

The substituting item in [21] can be functionally rendered in Arabic using two words, such as الشيء نفسه/ashshay'a nafsahu/, which can be literally translated into *the same thing*, thus adding one more word "thing", which was not structurally necessary in English.

There are still two issues to consider with this cohesive device. The first one is whether it is always anaphoric as claimed by Halliday and Hasan (1976) and Halliday and Matthiessen (2014). In fact, there is no reference to substitution as a cataphoric device in the literature so far. However, in certain types of texts, it seems, *one* can be cataphoric when it is preceded by a demonstrative *this*. In this case, one no longer replaces a noun but a general idea. Following is an example from a New York Times op-ed:

In this example, *this one* refers forward to the Italians tweets that mock ISIS's warning of heading to Rome. The point is that in certain cases, substitution can

[18] |I bought a big bag. My sister preferred to buy a small ***one***.

[19] |Go to the party. You will enjoy your time if you ***do***.

[20] |You look tired. If ***so***, please, feel free to go home.

[21] |She chose the roast duck; I chose **the same** (45).

[22] |The Italians got **this one** right. Last week,…Their tweets,…, included…

[23] |One and three make four.
|If you do the right thing, you will be fine.
|I'm so glad you could come.

be cataphoric. The second point is that the lexical items introduced in this section *one, do*, and *so* are not always substitutive. On this, Salkie (1995) provides the following examples (36):
This realization also has grounds in Arabic as واحد/waaHid/(Arabic for *one*) can have a numeric value, تفعل/taf`al/(Arabic for *do*) can have the mere function as the main verb in the sentence, and جدا/jiddan/(Arabic for *so*) can function as a modifier, meaning *very*.

4.10. *Conjunctions*

This particular category of cohesive devices has undergone several adaptations since its introduction by Halliday and Hasan in 1976 (Ahangar, Taki, and Rahimi 2012). The reason for this could be that it is not easy to produce an exhaustive list of the entire range of conjunctions (McCarthy 1991). Therefore, the 1976-model of conjunctions, which consisted only of the categories of *adversatives, additives, causal*, and *temporal*, went on an adding-up spree that may never come to a decisive end. Halliday and Matthiessen (2014) expanded the four types of conjunctions into nine by adding *apposition* (e.g., in other words, for example), *clarification* (e.g., in short, by the way), *variation* (e.g., instead, except for that), *comparative* (e.g., similarly, in a different way) and *respective* (e.g., in this respect, elsewhere). Locke (2004) added one more category, *listing*, and argues that temporal conjunctions, such as *first* and *second*, can also serve listing purposes since they can be used to list the elements of an argument. These expressions, representing the category of *listing*, are acknowledged to have identical functions in Arabic, too (Lahlali 2009). Table 3 presents the 10 categories of conjunctions with examples from English with Arabic alongside. These categories and examples are adapted from Halliday and Matthiessen (2014), Haywood and Nahmad (1993), Lahlali (2009) and Locke (2004).

Table 3. Types of conjunctions.

Conjunctions	English examples	Arabic examples
Appositive	that is	أي/'ay/
Clarifying	at least	على الأقل/`alaa al'aqall/
Additive	and	وَ/wa/
Adversative	but	لكن/laakin/
Varying	as for	أمّا/'ammaa/
Matter	here	هنا/hunaa/
Manner	similarly	بالمثل/bilmithl/
Spatio-temporal	then, when	ثمّ/thumma/, لمّا/lammaa/,
Causal-conditional	so, so that, if, because	فـَ/fa/, ل/li/, إن/'in/, لأن/li'anna/,
Listing	first	أوّلاً/'awwalan/

The above sets should not lead to the conclusion that English and Arabic have entirely identical sets of cohesive devices because each language has its own particular system. For example, the one-letter conjunctions وَ/wa/ and فَـ/fa/may have a variety of English correspondences belonging to different sets based on the context they are used in (Abu-Chacra 2007; Haywood and Nahmad 1993).

4.11. *Lexical cohesion*

According to Smith (2003), lexical cohesion is a seminal contribution of Halliday and Hasan (1976) as it has enabled linguists to find patterns of lexical co-occurrence in texts. However, the two categories of lexical cohesive devices, *reiteration* and *collocation*, which appeared in Halliday and Hasan's 1976 model, witnessed several adjustments, which have been integrated into the model suggested in this paper. Basically, all the developments and adjustments to the 1976 model maintained the category of *reiteration*, which involves repetition of the same word, while some of them have raised questions about *collocation*, describing examples of it as arbitrary co-occurrences, thus excluding them from lexical cohesion analysis (Hasan 1984; McCarthy 1988), or including them with certain adjustments that seek to systematize them, yet acknowledging the difficulty of doing so (Tanskanen 2006). It has been agreed, though, that *collocation* generally refers to the association that links the words that co-occur, or that have the tendency to occur with each other (Sinclair 1991; Stubbs 2001). One development at the level of reiteration is that introduced by Hoey (1991), who divided repetition to two categories, namely *simple lexical repetition*, such as a *girl*/*girls* and *complex lexical repetition*, referred to by de Beaugrande and Dressler (1981) as *partial recurrence*, such as *drug*/*drugging*. Scott and Tribble (2006) view repetition as a cohesive device in terms of keyness, whereby lexical items that reflect what the text is about are reiterated to signal their importance. One of the most comprehensive models of lexical cohesion has been developed by Halliday and Matthiessen (2014), who have divided lexical cohesion into five categories, which are repetition, synonymy/antonymy, hyponymy, meronymy, and collocation. It might be claimed that this 2014 model is built on a previous categorization introduced by Martin (1992), a classification that encompassed all the lexical types included in the 2014 model except for collocation. Therefore, the general classification of the 1976-model still holds yet with the addition of synonymy/antonymy, meronymy, and hyponymy as categories within it. Within the category of synonymy/antonymy, Halliday and Matthiessen (2014) have maintained the subcategory of *general nouns*, firstly introduced by Halliday and Hasan (1976), thus introducing lexical items, such as *thing, stuff*, and *place*, which can be synonymous with other lexical items in the text in certain situations. This particular group has been referred to in the

literature using various terminology, such as *signaling nouns* (Flowerdew 2003) and *shell nouns* (Aktas and Cortes 2008). It should be noted here that the subset of synonymy/antonymy has been emphasized as a major cohesive type in Arabic as it is usually used to express a wide range of meanings (Parkinson 2006). Table 4 shows some examples of lexical cohesive devices in English and Arabic.

4.12. *Parallelism*

This cohesive device was not introduced either in Halliday and Hasan (1976) or in Halliday and Matthiessen (2014) models. Yet, parallelism, which by and large refers to the repetition of a certain form or structure for the purposes of emphasis and insistence (de Beaugrande and Dressler 1981), has been acknowledged as a cohesive device by many scholars and authors (e.g., Neumann 2014). As for Arabic, Dikkins, Hervey, and Higgins (2002) assert that *parallelism* as a cohesive device typically involves repetition of the same grammatical category or categories, and that it is not as common in English as it is in Arabic. If this claim is true, it can explain the absence of this device from the 1976 model and from several other subsequent models of cohesion in English. Adding emphasis to this point, the authors suggest that Arabic-to-English translators should therefore be advised to use summary phrases instead of retaining all the elements of the source Arabic parallels when rendering parallel structures from Arabic to English. This study has added *parallelism* to the model suggested in this paper because it is acknowledged as a cohesive device not only by English scholars (e.g., de Beaugrande and Dressler 1981) but also by Arabic researchers (e.g., Aziz 2012).

In his analysis of the poetry of the famous Palestinian poet Mahmoud Darweesh, Sultan (2011) cites a number of examples where the poet employs parallel structures as cohesive devices. One of these examples can be found in [24] below, where the form "imperative + adverbial phrase" is repeated in a parallel structure.

Table 4. Lexical cohesive devices in English and Arabic.

Lexical cohesive device	English examples	Arabic examples
Repetition	patterns…patterns	نمـاذج/namaadhij/…نمـاذج/namaadhij/
Synonymy	big, huge	ضخم/Dakhm/, كبير/kabiir/
Antonymy	tall, short	طويل/Tawiil/, قصير/qaSiir/
Hyponymy	fruit, apple	فواكه/fawaakih/, تفاحة/tuffaaHah/
Meronymy	tree, branch	شجرة/shajarah/, غصن/ghuSn/
Collocation	horse, neighing	حصان/HiSaan/, صهيل/Sahiil/

[24] خذيني تحت يديك/khudhiinii taHta `aynayki/take me under your eyes
خذيني أينما كنتِ/khudhinii 'aynamaa kunti/take me wherever you are
خذيني كيفما كنتِ/khudhinii kayfamaa kunti/take me however you are

Following from the above discussion on the developments of the categories of cohesive devices since they were introduced in 1976, it becomes obvious that in order for a model to be comprehensive it should consider all these changes. This does not mean that all studies have to use such a comprehensive model in their analysis of cohesive devices as whether to use it in its entirety depends on the research questions and purposes.

5. Comprehensive model of cohesive devices

In order to build a model of cohesion that can be used across languages and across a variety of genres, there are two issues to be stressed. Firstly, the new model has to build on, rather than supplant the framework that was introduced in Halliday and Hasan (1976). The reason behind this strong recommendation for continuity is that the four-decade-old model has stood the test of time and is still used today by a significant number of authors and researchers. To continue to use the model in its original form or in a modified form means that the researcher engages in dialogue with a formidable body of research throughout which the findings are comparable and mutually interpretable. The investigations within this paradigm are replicable. This is a very rich tradition of language analysis which is, at the same time, open to innovation and the introduction of new more nuanced tools. Secondly, the new model which we wish to present in this paper needs to include all the adaptations and additions that have taken place since the 1976-model was introduced. This degree of comprehensiveness empowers the text and discourse analyst to engage more subtly with a wider variety of text types and across a number of languages. Any use of the new model gains the full benefit of intertextuality while retaining the scope to innovate.

Based on the conceptual framework discussed in the previous section, a comprehensive model of cohesive devices is presented in Table 5.

6. Conclusion

Although Halliday and Hasan (1976) introduced a seminal model of cohesive devices that have been used intensively in textual analysis over four decades now, it is time to include the contributions of other authors and resources in the 1976 model to come up with a new taxonomy for text analysis. Digging into a myriad of studies on the matter, the present paper has found that a number of elements can be integrated into the Hallidyan classification, for example homophoric reference and associative reference. Other additions have enriched our understanding of certain elements; a case in point in this regard is the further classification of verbal ellipsis into auxiliary contrasting and echoing. The category of ellipsis also witnessed a major development with the introduction of cataphoric ellipsis, since this

Table 5. A comprehensive model of cohesive devices.

Cohesive devices instrument
Reference
Endophoric reference (anaphoric and cataphoric)
Exophoric reference
Homophoric reference
Associative references
Ellipsis
(anaphoric and cataphoric)
nominal – verbal (auxiliary contrasting and echoing) – clausal
Substitution
(anaphoric and cataphoric)
nominal – verbal – clausal
Conjunctions
appositive – clarifying – additive – adversative – varying – matter – manner – spatio-temporal – causal-conditional – listing
Lexical cohesion
Repetition (simple/complex) – synonymy/antonymy – collocation – hyponymy – meronymy
Parallelism
(adjacent; distant)

category was believed to be only anaphoric. The category of conjunctions expanded from 4 elements to 11, and the new category of parallelism has been integrated into the new model. Nevertheless, the findings of the present paper should not be considered rigidly final, and as long as language evolves, more and more studies should be conducted to adapt linguistic models accordingly.

Disclosure statement

No potential conflict of interest was reported by the authors.

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