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Time frame as a determinant of accessibility of anaphoric demonstratives in Classical Arabic

Samer Omar Jarbou*
University of Sharjah, United Arab Emirates
Jordan University of Science and Technology, Jordan

Abstract
The aim of this paper is to investigate the determinants for choosing nominal anaphoric demonstratives in Classical Arabic (CA) by examining their usage in a corpus of CA texts. The study makes use of Ariel's (1990; 2001) concept of 'unity' as a theoretical framework from which to study the relationship between an anaphoric demonstrative, its antecedent and their shared referent. This study builds on Jarbou and Migdady's (2012) findings that 'anaphoric distance' (Ariel, 1990; 2001) has not been found to be a primary determinant of cognitive accessibility concerning the use of anaphoric demonstratives in CA. The results of this study show that the choice of proximal/distal anaphoric demonstratives in CA depends primarily on the 'time frame' of the referent. Anaphoric demonstratives are temporally anchored in the present time of interaction; if a referent existed within a past time frame or is expected to exist within a future time frame (in relation to the interlocutors' present time), that referent has low accessibility because of non-sharedness of time frame; if a referent existed or is experienced within a present time frame, it has high accessibility due to sharedness of time frame. Temporal distance replaces physical distance as a determinant of accessibility. In the corpus, proximal anaphoric demonstratives have been used in contexts of high accessibility while distal anaphors have been used in those of low accessibility. Findings of this study contribute to the dynamic view of demonstratives that textual/physical distance is not the primary or sole determinant of accessibility concerning demonstratives.

Key words
accessibility, anaphoric demonstratives, unity, time frame, Arabic

1. Introduction.
An anaphoric demonstrative is typically used in relation to an antecedent (i.e. a previously mentioned) language structure to point to a referent outside discourse. In (1) below, the word 'computer' is the antecedent, 'that' is the anaphoric demonstrative, and the actual computer described is the referent:

(1) I bought my first computer 18 years ago. **That** was an IBM and it cost me 1000 dollars.

One of the major interests of research on anaphoric demonstratives is discovering the factors that lead a speaker to choose one type of demonstrative (e.g. 'this, 'that') rather than another in a particular context. The present study investigates the conditions determining the choice of proximal and distal anaphoric demonstratives in a corpus of Classical Arabic (CA). It aims to address the following question: what is the primary factor that determines the accessibility values, and so the choice, of

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* Address for correspondence: Samer Jarbou, Department of English Language, University of Sharjah, United Arab Emirates. Email: sjarbou@sharjah.ac.ae. Alternate address: Department of English Language and Linguistics, Jordan University of Science and Technology, Jordan. Email: samerjar@just.edu.jo.

proximal and distal anaphoric demonstratives in CA? The hypothesis here is that when the referent of an anaphor occurs within the present time of interaction, the situation affords a high degree of accessibility and so proximal anaphoric demonstratives are used, but when the referent is related to past or future time relative to the time of interaction, the situation affords a low degree of accessibility and distal anaphoric demonstratives are preferred. This hypothesis suggests that temporal distance is a fundamental determining factor for the use of anaphoric demonstratives in CA.

In order to test this hypothesis, this study proceeds as follows: first, I explain briefly the different types of demonstratives. Second, I review some key studies on the determinants of using anaphoric demonstratives. This is followed by a description of the CA demonstrative system, of the CA corpus used in this study, and of the method followed to analyse data. Next, I discuss how demonstratives are used in the corpus. Finally, the conclusion includes a summary of findings and suggestions for further research.

2. Background and review of related literature
2.1 Anaphoric and deictic demonstratives

Demonstratives are used "to coordinate the interlocutors' attentional focus in the speech situation" (Diessel, 2006, p.467; see also Halliday and Hasan, 1976; Lyons, 1978, pp.636-638; Diver, 1984; Ariel, 1998; Strauss, 2002) in order to point at objects in a deictic (i.e. real-world) context or at entities in discourse. Demonstratives that are used deictically are usually referred to as 'exophoric' while those used in relation to structures in discourse are described as 'endophoric' (Himmelmann, 1996; Ariel, 1998; Diessel, 1999; 2006; Botely and McEnery, 2001; Dixon, 2003).

Exophoric demonstratives refer to objects or people in a physical spatio-temporal world; for example, in the utterance "they should have planted that oak tree in this place," 'this' and 'that' are used to point at objects or entities existing in the interlocutors' physical context of interaction. Endophoric demonstratives, however, cognitively point at individuals or objects through, or associated with, antecedent, or sometimes subsequent, structures in discourse. According to Ariel (1998), referential expressions are far more used anaphorically (i.e. in relation to linguistic context) than exophorically (i.e. in relation to physical context). The present study focuses only on endophoric demonstratives.

There are two main types of endophoric demonstratives: anaphoric and discourse demonstratives. Anaphoric demonstratives are mostly used with the aim of establishing 'coreferentiality' with a previous term in discourse (see Lyons, 1978, p.660; Levinson, 1983, p.67; Cornish, 2008). This process is performed in order to convey meaning coherently by maintaining focus on entities that have become shared knowledge for the speaker/writer, and addressee/reader, during discourse (Ehlich, 1982, p. 330; Sidner, 1983; Cornish, 2008, p. 999). In this relationship, the demonstrative is called an 'anaphor' which is related to another expression in the 'co-text' called the 'antecedent' (Ehlich, 1982, p. 330). The anaphor does not point at the antecedent but, rather, both of them share referentiality to an entity outside the text (Lyons, 1978; Levinson, 1983, p. 67; Cornish, 2008). This shared referentiality is focused at the 'referent' that cognitively exists "in the universe-of-discourse, which is created by the text" (Lyons, 1978, p. 670). An antecedent and its anaphor both point at the referent which exists outside the text (Diessel, 2006, pp. 475-476).

When the antecedent of an anaphoric demonstrative is easily discernible in context, the relation is described as 'direct' anaphora, as the example in (1) above shows. The antecedent 'computer' and the anaphor 'that' both co-referentially point at the real object (i.e. computer) outside the text. Nevertheless, when it is (relatively) difficult to directly define the antecedent, the relation between the anaphor and its antecedent is described as 'indirect' as in utterance (2) below (Francis, 1994; Botely, 2006, p.74; Diessel, 2006):

(2) A: the employees believe that the administration is abusing them.
     B: I definitely agree with **that**.

The antecedent of the anaphoric demonstrative 'that' in (2) is not represented by a distinct word but, rather, it is a proposition and so the relationship between the anaphor and its antecedent can be described as indirect.

In 'discourse' anaphora, however, the anaphoric demonstrative is not co-referential with its antecedent since the discourse anaphor points at the antecedent itself as a structure in discourse, as in the following example:

(3) A: one of the committee members claims that "some of the documents are missing from the file."

   B: who said **that**?

The anaphor 'that' (in B's utterance) points at the antecedent "some of the … file" in A's utterance. In discourse anaphora, an anaphor and its antecedent are not co-referential since the antecedent itself can be thought of as the referent for the anaphoric demonstrative (Lyons, 1978; Levinson, 1983; Botley, 2006).

In brief, the literature on deixis typically describes demonstratives that point at objects and people in the real world of interactants as deictic, whereas demonstratives that are used in relation to other structures in discourse are described as endophoric. There are two main categories for this latter relation: anaphoric and discourse demonstratives. Recent research focusing on endophoric demonstratives is mostly concerned with investigating the degree to which the speaker perceives that a referent is contextually accessible at a particular point in discourse. Two major perspectives can be discerned: the traditional perspective that mostly focuses on spatiality as determinant of how demonstratives are used and the interactive perspective which focuses on the interlocutors' perceptions of the non-spatialist connections among the different elements of context

2.2 Perspectives on accessibility concerning anaphoric demonstratives

Most of the cognitive research into anaphora concerns the question of how interlocutors use anaphoric expressions, investigating the ease of identifying or tracking antecedents in discourse (see, for instance, Ariel, 1990; 2001; Gernsbacher, 1991; Gundel, Hedberg and Zacharski, 1993; Stirling, 2001; Kahneman, 2003). This aim is also shared by many fields that investigate anaphora in discourse, though methods and theoretical perspectives differ. Drawing a clear line between such fields is difficult since the linguistics perspective is usually inherent within these viewpoints of anaphora.

Psychological considerations, for instance, mostly focus on memory retrieval, eye movement, and language processing; eye tracking is a method where data is collected and analysed through lab experiments that regularly include brain imaging and monitoring equipment. In computational linguistics, another major area, the aim is often to discover computational models or systems that may be able to automatically identify antecedents in natural language discourse. Data is usually collected and analysed through computer software with the aim of coming up with algorithmic formulae that can be used in applications such as machine translation, and that are capable, as much as possible, of recognizing antecedents in discourse. All of these approaches can be directly or indirectly related to the issue of 'anaphora resolution' where the aim is to identify the antecedents of referential expressions in discourse.

The present study investigates anaphora with regard to the issues of co-referentiality and discourse-level information; the aim is to uncover the factors that lead a speaker to use proximal and distal anaphoric demonstratives in CA discourse. It does not aim to discover the rules that an interpreter utilizes in order to determine the antecedent of an anaphor. Identifying antecedents in discourse is investigated in relation to several factors since there is a need for 'tools' to measure the ease of retrieval or accessibility value with regard to demonstratives. Accessibility relating to anaphoric demonstratives can be described as "cognitive access to linguistic items or propositions mentioned in discourse" (Jarbou, 2010, p. 3086). The accessibility value of a demonstrative can be described as high or low depending on how the speaker perceives the nature of the relation between the anaphor, its antecedent and their referent. The linguistics approaches that have received considerable investigation in (pragmatics) research concerning anaphoric accessibility are those of Ariel (1988; 1990; 2001) and Gundel, Hedberg and Zacharski (1993). What is notable about these two perspectives, and most relevant to the scope of this paper, is that they have constructed 'instruments' to assess the cognitive status of referential expressions (including demonstratives) in discourse. In the case of Ariel (1990; 2001), this instrument is her "Accessibility Scale" while Gundel, Hedberg and Zacharski (1993) offered the "Givenness Hierarchy."

2.2.1 Ariel's and Gundel et al.'s perspectives on anaphoric demonstratives

Ariel explores the relation between different referring expressions and their antecedents, in an English corpus, by classifying referential expressions into an 'Accessibility Scale' according to the degree of difficulty by which an addressee can cognitively retrieve (i.e. remember) an antecedent (1990, p.73; 2001, p. 31). Ariel (1998) argues that when retrievals related to referring expressions in discourse context are performed, the determining factor for the use of such expressions "is defined according to the degree of memory accessibility associated with the antecedent at the given stage of discourse" (p. 202). According to Ariel (1988; 1990), 'Low Accessibility Markers' are used to retrieve entities entertained at a low degree of accessibility (e.g. proper names and definite descriptions). 'High Accessibility Markers', on the other hand, retrieve representations held at a high degree of mental accessibility (e.g. personal pronouns); between these two, there are 'Mid Accessibility Markers' (e.g. anaphoric demonstratives).

Ariel (1988; 1990) argues that there are four factors of accessibility concerning the use of referential expressions: the first is 'anaphoric distance' or 'textual distance' which refers to the number of words, phrases, clauses or sentences between an anaphor and its antecedent;[1] the second is 'competition' between the different possible antecedents in discourse; the third factor is 'saliency' by which she means whether the antecedent is 'topic' or 'non-topic'.

Ariel's (1990; 2001) fourth factor of accessibility is 'unity' and she explains it in relation to two perspectives: the first is unity at large scale, by which she refers to whether the antecedent and its anaphor are within the same viewpoint, frame, world, discourse topic, or paragraph; the second is the "smallest scale" which is "the degree of connectivity between various sentential components" (1990, p. 131). She further explains that "connectivity on the smaller scale" refers to how much the interpretation of a referential expression (e.g. a pronoun) and recognizing its antecedent depends on understanding how the structures within the same sentence are connected to each other. This paper uses the concept of 'unity' based on Ariel's interpretation of 'unity' in its larger (i.e. more pragmatics-oriented) sense, operative in the discourse context rather than at clause or single-sentence level (see Ariel, 1990, pp.131-164). 'Unity', for the purposes of this paper, is considered as a cognitive feature of discourse rather than being strictly reduced to the level of intra-sentential correlations.[2] However, with regard to demonstratives, Ariel (1988, p. 65; 2001, p. 33-38) devotes more attention to anaphoric distance as the primary element determining anaphoric accessibility than to the other three factors.

Each of the three categories in Ariel's scale also has its own structure of accessibility also. For example, anaphoric demonstratives, as Mid Accessibility Markers, are categorized into a sub-scale where proximal demonstratives refer to antecedents at shorter distances than those for distal demonstratives (Ariel, 1988, p. 76).[3] As such, proximal demonstratives are labelled as High Accessibility Markers, while distal ones are labelled as Low Accessibility Markers, all within the category of Mid Accessibility Markers (Ariel 1988; 1990; 2001). This suggests that demonstratives manifest varying degrees of intermediate accessibility. Ariel (1990; 2001) tests this claim mainly by examining referential distance, but her claim is that each referring expression specializes to some degree of accessibility in general. Thus, Ariel (1990; 2001) predicts that proximal demonstratives encode a higher level of accessibility than distal ones, and, hence, are more likely to refer back to closer antecedents. However, the results obtained in some studies of anaphoric distance do not support the possibility that it can be taken as the primary determiner of the accessibility of anaphoric demonstratives.

In investigating the value of anaphoric distance as the main determiner of accessibility in discourse, Jarbou and Migdady (2012) examine only the parameter of anaphoric distance between proximal and distal demonstratives in relation to their antecedents in a corpus of CA. Their results show that anaphoric distance cannot be taken as a reliable criterion in determining the choice and use

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[1] See also Givon (1983) and Clancy (1980) in relation to anaphoric or textual distance in discourse.

[2] For more information on the division of labour between pragmatics and grammatical principles in relation to accessibility theory, see Ariel (2001, pp. 52-60).

[3] However, the internal order of elements within Ariel's High Accessibility Markers depends on calculations of 'anaphoric distance' and 'saliency'; the elements within Low Accessibility Markers are sub-categorized according to 'unity' and 'distance'.

of anaphoric demonstratives in CA. Their study finds that the accessibility value of CA anaphors cannot be consistently or satisfactorily determined based on anaphoric distance measurements. Anaphoric distance for many of the demonstratives in the CA corpus that they investigated is generally higher in the case of proximals than in the case of distals. Ariel's claim that proximal demonstratives are more likely to refer to textually close demonstratives is not supported by the overall results concerning anaphoric distance as a sole determiner of accessibility in CA (Jarbou and Migdady, 2012).

The results obtained by Botley and McEnery (2001) investigating English anaphoric demonstratives and those by Hernandez (2009) investigating Spanish anaphors with regard to Ariel's anaphoric distance agree with those obtained by Jarbou and Migdady (2012). In their investigation of the reliability of anaphoric distance as a determinant of accessibility in a corpus of English, Botley and McEnery conclude that anaphoric distance cannot be considered "a valid measure at all" with regard to accessibility of demonstratives (2001, p. 226). They also assert that "Ariel's claim that proximal demonstratives will refer to antecedents that are textually closer than is the case with distal demonstratives has not received strong support" (Botley and McEnery, 2001, p.224). Similarly, in his study of the use of anaphoric demonstratives in a corpus of Spanish texts, Hernandez (2009) concludes that textual distance, among other factors, is irrelevant with regard to the use and accessibility of demonstratives in Spanish discourse.

Gundel, Hedberg, and Zacharski (1993) have a similar representation to Ariel's 'Accessibility Scale' in the form of a 'Givenness Hierarchy' (GH, hereafter) which shows the connection between choosing a referring expression and the cognitive status of the referent in discourse. The GH defines six cognitive states that determine the use of referential expressions. 'Cognitive state' refers to how much attention or focus the speaker assumes the addressee has in relation to a referent. The concept of 'cognitive state' also refers to the status of referents in short-term memory. The GH is supposed to explain the usage of referential expressions (including demonstratives) in anaphoric and exophoric contexts. The statuses that are most relevant to demonstratives in the GH are the first three: "In focus" which relates to the form 'It', "activated" which relates to 'that', 'this', and 'this N', and "familiar" which relates to the use of 'that N'. According to the GH, if a referent is 'Activated', this means that it is active or present in the short-term memory of interlocutors; 'in focus' means that the referent is the focus of the interlocutors' attention. However, the GH, as Gundel (2010) argues, is intended to make predictions concerning which referential expressions would be used in a particular context. The GH would not provide us with appropriate 'tools' to explain why a referent that is in an 'Activated' cognitive status is sometimes referred to using a proximal while in another context it is encoded with a distal. GH would tell us that if a referent is in 'Activated' status, it would be referred to using a demonstrative (that can be proximal or distal) rather than, for instance, an indefinite article plus noun. This hierarchy works at/for the macro level of referential expressions but not at the micro level (notice that Ariel's [2001] Accessibility Hierarchy works at both levels).

This is the major reason that the GH does not seem to be able to offer substantial explanations discovering the determinants of using anaphoric demonstratives in the CA corpus even though it seems to offer explanations for why demonstratives in general rather than other referential expressions such as proper nouns are used in a particular context. As Gundel (2010, p.148) explains, the cognitive statuses in the GH are "assumed to encode manner of accessibility, not degree of accessibility." The GH, therefore, is not an accessibility hierarchy. Unlike anaphoric distance in Ariel's (2001) Accessibility Scale, the GH is not based on 'measurements'. According to Botley and McEnery (2000, p.10), the difficulty with Gundel, Hedberg, and Zacharski's (1993) "work is in finding testable claims that can be evaluated in a corpus. Unlike Ariel, Gundel does not give any specific metrics, such as textual distance, to allow us to measure the extent to which particular anaphoric expressions reflect particular cognitive statuses" (see also Walker, Joshi, and Prince, 1998; Taboada, 2008, p. 177). Therefore, since Ariel's anaphoric distance cannot be taken as a consistent determinant for the choice of anaphoric demonstratives in CA as the results obtained by Jarbou and Migdady (2012) show, and since the GH is too broad to assist in investigating proximal/distal choice, the aim in this article is to investigate the factors that have a stronger potential to be taken as determinants for this choice. To do this, it is necessary to consider alternative views that go beyond focusing on the interactants' supposed calculations of textual distance or general descriptions of accessibility.

2.2.2 The interactive perspective as an alternative to the Spatial View

Anaphoric distance, as a determinant of demonstrative choice, can be described as an extension of the traditional perspective concerning the same demonstratives as used deictically in physical context. This perspective is based on spatial considerations of demonstratives (both deictic and anaphoric) where proximals are supposedly used to refer to entities that are close, while distals are used to refer to those that are far away in relation to a centre of referentiality. In the case of exophoric demonstratives, this centre is identified with the speaker's location while, in the case of anaphoric demonstratives, this centre is usually identified with the anaphor's location in discourse, as is common in perspectives that depend heavily on anaphoric distance.

However, as recent research shows, the traditional near-the-speaker/far-from-the-speaker distinction does not provide an accurate account of the data, because proximal and distal demonstratives are sometimes used regardless of the physical distance between the speaker and the referent. Strauss (2002, pp.134) believes that "speakers do not seem to use the two forms with the type of systematicity suggested by the proximal vs. non-proximal distinction." Likewise, Piwek, Jan Beun, and Cremers (2008) discuss the "limited applicability" of the traditional view that demonstratives are used in relation to 'nearby' versus 'faraway' considerations of objects in context. Recent research has shown that the spatial perspective is incapable of explaining the usage of demonstratives in many situations, as, for example, when proximal demonstratives are chosen to index entities that are physically distant from the interactants or concerning distal demonstratives used to point at near objects based on perceived perceptibility (see Jarbou 2010, p. 3080 and p. 3091).

The shortcomings of the traditional spatialist views have urged researchers to seek alternative perspectives on demonstratives in action. These alternatives emphasize that the proximal-distal distinction between the various degrees of demonstratives should not be based on traditional semantic descriptions as 'near' versus 'faraway' since these have been proven to be limited and inadequate (see Piwek, Jan Beun, and Cremers, 2008; Lakoff, 1974; Manning, 2001; Jarbou, 2010). Proponents of this view argue that demonstratives are 'communicatively' (Diessel, 2006) used in connection to 'cognitive', 'interactive', and 'social' processes in a 'dynamic' context (Himmelmann, 1996; Manning, 2001; Marchello-Nizia, 2005; and Hanks, 2005).

As a substitute for the inadequate terms 'near/far' from speaker, the alternate model presented by Kirsner (1990), for instance, uses the terms 'Low deixis/High deixis'; Piwek, Jan Beun and Cremers (2008) use the terms 'intense indicating/neutral indicating'; Jarbou (2010) uses 'low/high accessibility'; Strauss (2002) uses the terms 'low/medium/high focus'. In these recent perspectives on demonstratives, referentiality depends on how the speaker takes into account issues such as the addressee's physical, cognitive and/or psychological accessibility to/awareness of the referent, in addition to issues such as the significance of the referent to the addressee and his/her interest in it, and how the speaker assimilates the associations among contextual elements.

As far as CA is concerned, and based on the results obtained by Jarbou and Migdady (2012) that anaphoric distance measurements cannot consistently account for how anaphoric demonstratives are chosen and accessed in CA, the present study aims to investigate how the non-spatial, recent perspective of demonstrative referentiality can be used to investigate accessibility with regard to anaphoric demonstratives in CA. But first, I provide a brief overview of demonstratives in CA.

2.3 Demonstratives in CA

Research investigating the history of CA generally agrees that it was a widespread literary variety that was common in use, for instance in poetry and public speeches, among the many Arab tribes in the Arabian Peninsula before, and shortly after, the rise of Islam in the Seventh Century AD (see Owens, 2006, p.38).

CA, in a similar fashion to many other languages within the West Semitic family, attaches various types of morphemes to demonstratives to indicate semantic and grammatical qualities such as gender, number, case, distance and/or dialectal variation.[4] Masculine and feminine dual demonstratives, unlike singular and plural ones, can be inflected to indicate case (i.e. nominative and causative). The most

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[4] For information on dialectal variation concerning CA demonstratives, see Jarbou (2012); see also Jarbou (2017) for information on the semantic-pragmatic interface with regard to Spoken Arabic demonstratives; for information on demonstratives in other West Semitic languages, see Hasselbach (2007, p. 24).

commonly used demonstratives are *haaða* 'this-Sg. M.', *haaðihi* 'this-Sg. F.', *haaðaan*, 'these-Dl. M.', *haataan* 'these-Dl. F.', *ðaalika* 'that-Sg. M.', *tilka* 'that-Sg. F.', *haaʔulaaʔi* 'these-Pl. M./F.', and *ʔulaaʔika* 'those-Pl. M./F.' (see Jarbou, 2012).[5] These demonstratives all exist in the corpus examined in this article. However, following the same path of Jarbou and Migdady (2012) when they investigated the validity of anaphoric distance as a determiner of the accessibility value of CA demonstratives, this paper focuses on the following four singular demonstratives: *haaða* 'M. this', *haaðihi* 'F. this' *ðaalika* 'M., that', and *tilka* 'F. that'; these demonstratives are expected to have the same behaviour with regard to accessibility as the corresponding dual and plural demonstratives. Also, they recur far more frequently in the examined corpus than dual and plural demonstratives (see Jarbou and Migdady, 2012). The next subsection describes the method that has been used to investigate the determinants of accessibility of the four anaphoric demonstratives in the CA corpus.

3. Method

This study uses the same corpus as that used in Jarbou and Migdady (2012). They studied it to test the validity of anaphoric distance as a primary determinant of anaphoric accessibility, but this study investigates the contextual conditions where CA anaphoric demonstratives are used. Most of the texts in the corpus represent conversations that have "come from different resources such as the writings of grammarians of Arabic, philosophers, historians, and from books describing the different aspects of" the lives of Arabs in the Arab Peninsula (Jarbou and Migdady, 2012, p. 431). The period within which these texts originated spans from the Sixth Century A.D. to around the end of the Seventh Century A.D. The corpus (about 40,000 words) represents the first half of the first volume of the three-volume *Jamharat Khotab Al-Arab* (*JKA*). *JKA* is a collection of speeches, sermons, arguments, debates and descriptions of events and aspects of 'ancient' everyday Arab life; many of these events took place during gatherings or in the 'courts' of kings, caliphs, tribal leaders or other prominent figures in old Arab communities. The period of production for its three volumes is from the Sixth Century A.D. to around the middle of the Ninth Century A.D. This huge collection was compiled and published by A. Safwat in 1933 (for more details see Jarbou and Migdady, 2012).

The contexts in which CA demonstratives occur in the corpus have been studied in order to determine if their use is deictic or anaphoric. Focus is limited to demonstratives used anaphorically. This paper follows the same distribution of these demonstratives into anaphoric and deictic in the *JKA* as that arrived at by Jarbou and Migdady (2012, p. 435). The number of CA anaphoric demonstratives in the corpus is 216 (Table 1, column 2, below, shows the number and percentage of their occurrences). The context of each occurrence of demonstratives is also studied to identify its relevant antecedent and referent. Then, since the hypothesis in this paper emphasizes that the temporal frame of the referent (i.e. temporal distance) is more important than anaphoric distance between an anaphor and its antecedent, these three elements (i.e. anaphor, antecedent, and referent) have been investigated in relation to the time when they have occurred or are expected to occur in the world of discourse. Time frame is divided into present, past, and future. The demonstrative anaphors investigated always occur in a present time frame as uttered by their original speaker (i.e. not as when reported later by another speaker). Antecedents of anaphoric demonstratives in the corpus also always occur within the interactants' present-time discourse. Referents, however, either exist in present, past, or are expected to occur in future time, all in relation to the moment of utterance.

The element of 'time frame' can be generally related to the idea of temporal 'sharedness' concerning anaphors and their referents. This feature can be seen as reflected in Ariel's (1990) fourth determinant of accessibility which is 'unity'. Ariel mentions 'unity' as one of the factors of the accessibility of referential expressions, (Ariel, 1990, pp. 69-72; see also Jarbou and Migdady, 2012, pp. 427-428). According to Ariel, 'unity' between an anaphor and its antecedent concerns whether they are "within vs. without the same frame/ world/ point of view/ segment or paragraph" (2001, p.29) (see section 2.2.1 above). However, according to Jarbou and Migdady, although Ariel (1988; 1990; 2001) does not investigate 'unity' in relation to demonstratives, it is expected that investigating sharedness of "the same frame/world/point of view/segment or paragraph" (Ariel, 2001, p. 29)

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[5] In the Arabic transliteration used in this article, vowels are represented as either short or long as follows: /a/-/aa/, /i/-/ii/, and /u/-/uu/. In addition, diphthongs are transliterated as /aj/ and /aw/. Appendix A shows the description of abbreviations and phonemic symbols used in this article.

between an anaphor, its antecedent, and their referent, can offer significant insights concerning how CA anaphors are used in discourse (2012, p. 439).

Furthermore, even though Ariel (1990; 2001) does not mention 'time frame' by itself as one of the elements of 'unity', the general feature of temporal sharedness or 'connectivity' between an anaphor and its referent can be related to her large-scale concept of 'unity'. In other words, unity or disunity between the time frame of the anaphor and what it is used to focus on (i.e. either referent or antecedent) can be investigated as a determiner of accessibility of CA anaphoric demonstratives. Thus, if the anaphor, which is by default anchored in the interlocutors' present time, points to a referent also anchored in a present time frame or to the antecedent itself, they have a shared time frame or strong unity; this situation is expected to express high accessibility. However, when the anaphoric demonstrative (anchored in a present time frame) points to a referent anchored in a past or future time frame, the unity degree between the demonstrative and its referent is weak or absent and so this situation is expected to be a determiner of low accessibility.

Analysis of the time frame of the entities that anaphoric demonstratives point at is expected to reveal patterns concerning the choice and usage of proximals and distals in CA. As such, to reformulate the aim of this study more precisely, this paper aims to answer the following questions:

1. Does 'time frame' have an effect on the accessibility value of CA anaphoric demonstratives?
2. If 'time frame' is a determinant of accessibility, how does it lead speakers to choose either proximal or distal anaphors?

This study follows the recommendation by Jarbou and Migdady (2012) that investigating features of 'unity' (Ariel, 1990) related to sharedness of the same 'frame' or perspective inherent in the relations between anaphor, antecedent and referent "can offer significant insights concerning how CA anaphors are used in discourse" (Jarbou and Migdady, 2012, p. 439). It is supposed here that 'time frame' as an element of 'unity', has the potential to offer better results for investigating the determinants of accessibility concerning the usage of demonstratives in CA, since anaphoric distance has failed to do so.

In this section, I defined and illustrated the criteria followed to evaluate time frame for the purposes of this study. This leads to the next section which primarily examines the role of time frame in the choice of proximal and distal anaphors in CA.

4. Results and discussion

This section investigates how a speaker perceives the degree of cognitive anaphoric accessibility based on the factor of time frame to determine the choice of proximal and distal anaphoric demonstratives in the CA corpus. The hypothesis proposes that temporal distance replaces spatial distance as a fundamental factor for the use of anaphoric demonstratives in CA.

For the purposes of this paper, 'time frame' refers to the temporal context of the referent (relative to the moment of speech interaction): whether the referent took place or was experienced in the past, is experienced in the present, or is expected to take place in the future. For example, time frame is past when the incident or entity that the antecedent refers to took place, or was experienced, in a previous context that is temporally detached from the interlocutors' present discourse time (i.e. the entity had been experienced within a past event time). [6] As a result, the three categories within time frames represented by past, present and future do not necessarily refer to the time when discourse takes place. For instance, in example (4) (Safwat, 1933, p. 105) below, the referent is anchored in the past in relation to the interactants' present discourse time. [7]

(4) *thumma ina 3amran dakhala   Hadiiqatan lahu wa ma3ahu ʤaariyatayni min*
    then   it-is **3amr entered-he garden   his and with-him maids-two from**

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[6] In this paper, 'discourse time' stands for the period of the interaction within which antecedent and anaphor exist. 'Event time' refers to the time span within which a referent is anchored.

[7] The Arabic transliteration is followed by a broad word-for-word translation into English and a parallel translation. Antecedents and anaphoric demonstratives are highlighted in bold type where possible.

ǵawaariih fabalagha   ðaalika Tariifa.
maids-his so-reached   **that**   Tareefa
'3amr entered one of his gardens with two of his maids, and then Tareefa knew about that'

In (4), the incidents referred to by the anaphor *ðaalika* took place in the past in relation to the present discourse time of interlocutors.

As for the behaviour of CA anaphors in the examined corpus, two major consistent patterns have been recognized in relation to the time frame of referents. The first pattern is in the case of distal anaphoric demonstratives: these are noticeably associated with referents that are related to past or future time frames. That is, the referent in these cases was encountered or experienced in the past or is predicted to be encountered or to take place in the future. The referent here is temporally distant in relation to discourse time either into past or future. In this pattern, temporal unity or connectedness between the anaphor and its referent is absent. For example, in the following case (Safwat, 1933, p. 80), similar to that in (4) above, the distal *ðaalika* is used to point at incidents anchored in a past time frame:

(5)   *faʔawQa3a kisra bihim wa Qatala   almuQaatila wa baQyat ðarariihim*
defeated-he Kisra them and killed-he the-fighters and stayed families-their
fi masaakinihim laa mani3a   laha wa balagha ðaalika bani alHarith.
in lodgings-their no defender them and reached **that**   sons alHarith.
'So Kisra (ruler of Persia) defeated them, killed their fighters, and their families remained
in their lodgings without any protection and then that reached the tribes of al-Harith'.

The anaphor *ðaalika* in (5) points at incidents that had taken place within a past time frame when the speaker is reporting those incidents. Discourse time (present) and referent time (past) are distant from each other. The anaphor, therefore, that is selected is a distal one. As illustrated in Table (1) below, the distal *ðaalika* occurs 84 times (i.e. 69%) in the corpus in contexts involving past time frames out of its total 122 anaphoric occurrences, while the feminine distal *tilka* is used in the same way 14 times (i.e. 88%) out of its total 16 occurrences in the corpus.

CA distal anaphors are also used in the corpus to refer to incidents that a speaker expects, promises to happen, or to be experienced in a future event time in relation to his/her present discourse time, as in the following context (Safwat, 1933, p. 121):

(6)   *mata kaanat ʔalmu3ayana wal liQaʔ fafii ðaalika daaʔun min ʔalʔdwaaʔ*
When was-it **scrutinizing and dating** so-in **that** ailment of ailments.
Whenever (mutual) scrutinizing and dating (between youthful men and women) take place,
so that is one of the ailments (i.e. problems) in society'.

The speaker in (6) is describing an anticipated result that he expects will be the outcome of dating between young men and women. The entity referred to did not take place in the past or present in relation to the time of utterance; rather, it is a prediction concerning a future time frame. These contexts where the referent pointed at is related to a future time frame represent 35 (29%) out of the 122 total occurrences of *ðaalika* 'that-Sg. M.' and 2 (12%) out of the 16 occurrences of the feminine demonstrative *tilka* 'that-Sg. F.' (see Table 1 below).

Consequently, the first pattern concerning CA anaphors in the corpus is that the distals *ðaalika* and *tilka* are almost always used to point at referents experienced in the past (84% and 81%, respectively) or are expected to be experienced/occur in the future (29% and 12%, respectively; see Table 1 below) in relation to discourse time.

In the second pattern, it has been found that proximal anaphors are used in contexts where the antecedent refers to entities that are experienced in, or are the focus of, the interactants' current context (i.e. their present time frame); event time happens within discourse time. Temporal unity between the anaphor and its referent in each of these contexts is strong. In example (7) (Safwat, 1933, p.69), the referent of both the proximal anaphor *haaða* and its antecedent is not related to past or future but is related to present time since the speaker is describing the type of qualities she prefers in a man; she is not referring to one who she has met in the past or will meet in the future:

(7) *Ɂaju ridʒaali ɁHabu Ɂilajki Qalat   Ɂsahlu   nnadʒiib ɁsamiHu   alHasiib*
Which men prefer to-you said-she **easy-going clever   considerate thoughtful**
Ɂnnabual   Ɂariib Qaala lahaa hal baQya ɁHadun Ɂafdhalu min haaða.
principled witty said-he to-her is remained anyone better   than **this**
'What type of men do you think is best? She answered, 'the one who is easy-going, clever, considerate, thoughtful, principled, and witty'. Then he asked 'Is there anyone who is better than **this**?'

The proximal anaphor *haaða* 'this-Sg. M' in (7) is used by the speaker to focus on a referent as a cognitive representation generated within the interlocutors' present. The referent here is cognitively easily accessible and is temporally proximal. It has high accessibility as it occurs within a present time frame.

The majority of occurrences of the proximals *haaða* 'this-Sg. M' and *haaðihi* 'this-Sg. F.' in the CA corpus involve contexts where the referent pointed at is anchored in the interlocutors' present time frame; this is represented by 40 out of 57 (i.e. 71%) occurrences for *haaða* and 20 out of 22 (i.e. 91%) occurrences for *haaðihi*, as shown in Table (1) below.

Table 1. Distribution of CA anaphors according to Time Frame (TF) of referents. A.O.: anaphoric Occurrences.

Anaphor	A.O.	Past TF	Present TF	Future TF
haaða	56 (26%)	10 (18%)	40 (71%)	6 (11%)
ðaalika	122 (57%)	84 (69%)	3 (2%)	35 (29%)
haaðihi	22 (10%)	2 (9%)	20 (91%)	0 (0%)
tilka	16 (7%)	14 (88%)	0 (0%)	2 (12%)

Consequently, time frame is evidently a major determining factor regarding the use of proximal and distal anaphors in the CA corpus since results show that distals are used when the referent is related to a past or a future time frame rather than to a present time frame. On the other hand, the dominant feature concerning the use of the proximal anaphors *haaða* and *haaðihi* is that they are used with antecedents whose referents are situated within the interactants' present time frame. Consequently, unity as sharedness of the same time frame between an anaphoric demonstrative and its referent emerges as a primary determinant of the choice of proximal and distal demonstratives in CA.

However, as Table (1) above illustrates, there are instances in the analysed data where proximal anaphors (mostly represented by the masculine *haaða*) are associated with antecedents whose referents are entities experienced within a past (18%) or that will take place within a future time frame (11%). These few occurrences do not seem to be in line with the finding that most proximal anaphors in the corpus point to referents experienced within the interlocutors' present time frame.

The contradiction concerning the use of proximals in contexts involving referents occurring in the present in contrast with those in past and future time frames is more apparent than real. In these latter cases (i.e. past and future), proximal demonstratives are used in discourse anaphora contexts rather than in direct or indirect ones. That is, these proximals are used to focus on the antecedents themselves as segments of discourse rather than to focus on their referents (occurring in future or past contexts).

Thus, when a linguistic string X is the antecedent, we need to find out whether its world referent is the relevant discourse entity concerned or if it is the linguistic act itself. Whereas the world referent may very well be in the past or future, the linguistic act/speech time is always in the present. Hence, such cases pose no counter-examples to the generalization offered by the author.[8]

These segments of discourse (i.e. antecedents) in the form of words, clauses, or sentences occur within the same discourse time as that of the anaphors that point at them, and so they are uttered within the same (present) time frame. The time frame of the referent in these cases of discourse anaphora is irrelevant with regard to the choice of anaphoric demonstratives. Therefore, proximal anaphors are sometimes used in association with antecedents related to referents anchored in a past or

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[8] I am grateful to one of the reviewers for his/her ideas and suggestions in this paragraph.

a future time frame simply because these proximals point at the antecedents themselves, occurring in a present time frame, rather than share referentiality with them in pointing towards their referents. Consequently, the proximal anaphors *haaða* 'this-Sg. M' and *haaðihi* 'this-Sg. F' are used either to point at referents experienced within the interlocutors' present time frame or to point at the antecedent itself as a discourse segment (i.e. discourse anaphora) regardless of what it refers to. In (8) below (Safwat, 1933, p.193), the proximal anaphor *haaða* 'this' is used to point at the antecedent itself (a saying or oral message mentioned earlier by the speaker) which is anchored (i.e. as uttered expression) in the present time frame of interaction despite the fact that its referent is anchored in the past.

(8) *fakaana kulu man ʔqraʔu ʒalajhi ðaalika alkitaab wa yasmaʒu haaða alQawla*
     So-was every one read-I on-him that   the-book and hears-he **this saying**
     'Anyone to whom I read that message and also heard this saying from me….'

The proximal *haaða* 'this' is used in (8) to focus on a saying (i.e. antecedent) as a discourse segment that the speaker has already spelled out to his audience in his speech; this antecedent has already become cognitively familiar to his audience.[9] It exists in a present time frame and is cognitively accessible, and so a proximal anaphor is used to refer to it. Although the 'saying' had first occurred before in a past time frame, it is reproduced in the interactants' present time frame.[10] By contrast, in (8), the speaker also uses a distal anaphor which is *ðaalika* 'that-Sg. M' to point at the referent of the 'message' which occurred in a past time frame; the word 'message' occurs in the interlocutors' present time frame but its referent occurs in the past.

In addition, proximal anaphors occur in the corpus in contexts where the referent is anchored in a future time frame (and where we would expect a distal), also because the anaphor points at the antecedent itself rather than at its referent located in future time.

Table (2) below shows that the proximal *haaða*, for instance, has occurred in 24 (i.e. 43% of all occurrences) contexts of discourse anaphora (i.e. pointing at the antecedent itself rather than sharing referentiality with it). In these contexts, *haaða* has been used to encode antecedents whose referents are anchored in past (10 occurrences), present (8 occurrences), and future (6 occurrences) time frames (see also Table (1) above). In the remaining 32 occurrences (i.e. 57%), focus has been on the referent occurring in a present time frame.

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[9] This antecedent, however, is too long and so is not included in example (8) for space considerations.

[10] The proximal in example (8) is used as a modifier of the nominal following it; however, proximals like this one showed the same function and behaviour as proximals that are not used as modifiers in similar contexts in the corpus with regard to the factor of time frame.

Table 2. Distribution of proximal and distal anaphors in the CA corpus according to whether focus is on the referent or on the antecedent.

Anaphor	Focus on referent.	Focus on antecedent.	Total
haaðaa	32 (57%)	24 (43%)	56
ðaalika	119 (98%)	3 (2%)	122
haaðihi	18 (82%)	4 (18%)	22
tilka	16 (100%)	0 (0%)	16
Total	185 (86%)	31 (14%)	216

As Table (2) shows, the distal anaphors 'ðaalika' and 'tilkaa' are very rarely/never used in the corpus to point at antecedents (2% and 0%, respectively) simply because these distals point at referents occurring in past or future event time while antecedents (acting as referents in discourse anaphora) occur in present event time.

Examination of the occurrences of proximal and distal CA demonstratives in the corpus has revealed that unity or disunity between the time frame of the anaphor and what it is used to focus on (i.e. either referent or antecedent) is a determiner of accessibility of CA demonstrative anaphors. Thus, if the anaphor, which is always anchored in the interlocutors' present time, points at a referent that is also anchored in a present time frame or points at the antecedent itself, they have strong unity. Such a situation involves high accessibility. When an anaphoric demonstrative points at a referent anchored in a past or a future time frame, the unity degree between the demonstrative and its referent is weak or absent and so the situation concerns low accessibility. When a referent and its anaphor are within the same time frame (i.e. present), the context is *symmetric*, but when the referent and anaphor are not within the same time frame, context is *asymmetric*.

5. Conclusion and suggestions for further research

The present study has revealed that the choice of proximal/distal anaphoric demonstratives in CA is determined by factors that take into consideration the interlocutors' cognitive view of the temporal aspect inherent in the relationship between an anaphor, its antecedent and their referent. This determining factor is the 'time frame' of the referent; a referent can be anchored in a past, present or future time frame, in relation to the time of interaction. An anaphor and its antecedent are anchored in the interlocutors' present time frame. The findings of this study show that temporal distance, rather than a spatial one, is the major determining criterion for the use of anaphoric demonstratives in CA.

Although Ariel (1990; 2001) practically measures the degree of accessibility of anaphoric demonstratives with regard to the parameter of anaphoric distance, the findings of this study show that the value of accessibility with regard to anaphoric demonstratives in CA is determined by conceptions concerning 'unity' and symmetry with regard to time frame between an anaphor and its referent.

The findings of this study show that if a referent existed within a past time frame or is expected to exist within a future time frame, a distal anaphor is used to (verbally) point at it. If a referent is experienced within a present time frame, a proximal anaphoric demonstrative is used. Sharedness and unity with regard to time frame indicate high accessibility while non-sharedness or non-unity indicates low accessibility. The findings of this study support Ariel's (1990; 2001) general claim that proximal demonstratives are high accessibility markers while distal demonstratives are low accessibility markers.

Considering the observations made in the present article and their contributions to our overall understanding of the use of anaphoric demonstratives in CA, there are some points that need to be noted. Firstly, the present study does not claim that time frame is the only determinant concerning the choice of proximal and distal anaphoric demonstratives in CA. It is expected that further research using, for instance, another type of corpus, other research methods, and/or adopting a different perspective (than those used in the present study), may add further insights as to how anaphoric demonstratives are used in CA. Furthermore, the applicability of time frame in particular as a determinant of accessibility needs to be further investigated with regard to other referring expressions in CA, in spoken varieties of Arabic, and in other languages.

Acknowledgement

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Appendix

Following is a list of the symbols used in this paper:

Symbol	Description
/ʔ/	glottal stop
/ð/	voiced interdental fricative
/ʒ/	voiced pharyngeal fricative
/H/	voiceless pharyngeal fricative
/kh/	voiceless velar fricative
/T/	emphatic voiceless alveolar
/dh/	emphatic voiced interdental fricative
/gh/	voiced velar fricative
/Q/	voiceless uvular stop
/S/	emphatic voiceless alveolar fricative
/dʒ/	voiced palato-alveolar affricate
/a/-/aa/, /i/-/ii/, /u/-/uu/	short-long vowels
Sg.	singular
Dl.	dual
Pl.	plural
F.	feminine
M.	masculine