
RESEARCH ARTICLE

English Transliteration of Arabic Personal Names with the Definite Article {al-} on Facebook

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ABSTRACT

This study aimed to explore how native speakers of Arabic transliterate first and last names containing the definite article {al-} to English on Facebook; what variations exist in transliterating the definite article itself, which is usually attached to the name in Arabic script; how Arabic speakers transliterate {al-} before sun and moon letters in their names; and which strategies they use in transliterating names with a definite article. A sample of 641 unique names with 1207 occurrences (repeats) was collected from the author's friends' list on Facebook. Results revealed that {al-} was used in 55% of the names; {el-} was used in 44%; reduced {l-} was used in 1% and {il-} was used in one name only. In 54% of the names, the definite article is attached to the name, with the names spelled in lowercase (الجرف *Algarf*, *Aljarf*; الشيخ *Alshekh*; *Alsayd*, *Elsayed*, *Alqudah*; *Alshareef*). In 15.5% of the names, the definite article is detached from the name, i.e., spelled as an independent morpheme (الجرف *Al Jarf*, *Al Jorf*, *Al Jurf*; القضاة *Al Qudah*). In 15.5% the name is spelled with a capital letter although it is attached to the definite article (الجرف *AlJarf*). In 13.5%, the definite article and the name are hyphenated (الجرف *El-Garf*, *Al-Jurf*). In 1%, the definite article is reduced to {l-}, i.e., the vowel in the definite article is deleted (الجرف *ljarf*, الأسود *Lassoued*, الغريب *Leghrib*). In addition, it was found that 40% of the name that follows the definite article begins with a sun (coronal) consonant (*Al-Salem*; *Attaher*) as opposed to 60% of the names that begin with a moon letter (*Alomari*, *Aljarf*). The study recommends a strategy for transliterating the definite article where the following name begins with a sun (coronal) letter based on the English grapheme-phoneme correspondence rules to enable non-native speakers of Arabic to pronounce the transliterated al+ noun accurately.

KEYWORDS

Arabic-English transliteration, Arabic personal names, Facebook spelling, name transliteration, transliteration competence, variant transliterations.

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1. Introduction

Nouns and adjectives in Arabic are marked for definiteness or indefiniteness. Indefiniteness in Arabic is zero-marked, i.e., there is no indefinite particles as in some language, such as French which has three indefinite particles (*un* masculine singular; *une* feminine singular; and *des* for plural masculine and feminine). When definite, Arabic nouns and adjectives are attached to the definite article {al-}. Unlike other Arabic particles that constitute an independent morpheme, {al-} is always prefixed to nouns and adjectives and never stands alone which means that it is a bound morpheme. {al-} is not marked for number, gender, or case as it is the case in French which has several definite articles used with nouns according to their number and gender (*le* for singular masculine, *la* for singular feminine, and *les* for plural masculine and plural feminine). The Arabic definite article {al-} may be attached to some proper nouns such as surnames, city and country names and so on (*Aljarf*; *Almasri*; *Ar-riyadh*; *Alkahira*; *Alingleezi*; *Alfurat*), whereas other proper nouns in Arabic may not be affixed to {al-} as in *Misr* (Egypt), *Turkiyya* (Turkey); *Makkah*; *Dijlah* (Tigris River) (Al-Jarf, 1990b; Al-Jarf, 1996; Al-Jarf, 1994).

The pronunciation of {al-} in Arabic varies. It might be pronounced {al-}, {il-} or {l-} depending on whether it is used in Standard or Colloquial Arabic and the initial phoneme of the word that follows it and final phonemes of the word that precedes it. The sound of the {l-} consonant of the definite article also varies as to whether it is followed by a noun that begins with one of the sun letters such as *t, d, r, s, n*. Through an assimilation process, it is doubled. For example: For "the light", Arabic speakers do not say *al-Nour*, but *an-Nour*. When {al-} is followed by one of the moon letters, like *b, f, m, k, j, q, w, y*, there is no assimilation. So Arabic speakers would say *al-masjid* (the mosque). The moon and sun letters only affect the pronunciation of the definite article + noun but not the spelling of the article {al-} + noun (Al-Jarf, 2003; Al-Jarf, 1990a; Al-Jarf, 1994).

Due to the importance and variability of the Arabic definite article {al-} and its pronunciation that results in variant transliteration in foreign languages such as English, it has been to focus of some research studies in the Arabic language literature. Sulieman (2021) declared that definite and indefinite articles differ from one language to another. Any change in the use of articles leads to a change in the semantic implication in the sentence where the article is used. One of the differences between the English and Arabic definite articles is that the English definite article "the" is always pronounced, whereas the Arabic definite article {al-} has 2 allomorphs sun {al-}, and moon {al-} in terms of whether the article is pronounced or not. In addition, English has two indefinite articles "a" and "an", whereas Arabic has no articles to indicate indefiniteness. The definite article in both languages is used to express either a specific reference or a concept shared by the speaker and the hearer. The definite article in both languages can be used with uncountable nouns as well (Al-Jarf, 1995a; Al-Jarf, 1995b; Al-Jarf, 2002).

Few more studies focused on the assimilation process associated with the attachment of the definite article to Arabic nouns and adjectives. Kambuziya (2007) presented an autosegmental analysis of the Arabic definite prefix assimilation through linking or delinking of features. She studied the phonological aspects of two classes of consonants and indicated that the definite article is fully assimilated by fourteen consonants (sun letters) when it occurs before one of them. The other group of consonants that does not share this assimilation process is called "moon" letters. The affricate coronal consonants do not go through an assimilation process. Complete assimilation occurs only in morpheme boundary and does not take place in one morpheme.

Similarly, Dawood and Atawneh (2015) concluded that the /l/ sound in the definite article disappears when it is followed by coronal consonants making the pronunciation of a word or speech easier.

Another study of the assimilation of Arabic *j* across dialects showed three contrasting grammatical patterns: (i) cases where *j* does not trigger assimilation; (ii) cases where coronal *j* triggers assimilation; and (iii) cases where velar *g < j* optionally triggers assimilation. Historical evidence indicates that velar, palatal, and prepalatal variants of *j* have coexisted since Old Arabic, while velar /j/ arose from coronal /j/ in urban Egyptian Arabic from a later generalization of the velar variant. Cases in which /j/ does not trigger assimilation suggest that an underlyingly palatal, rather than a velar variant underlies dialects in the Arabian Peninsula with pattern (i), and that pattern (ii) emerged in Old Arabic from the phonological reanalysis of fronted *j* as coronal (Freeman, 2016).

Alteyp and Alteyp, 2020 added that letter /l/ in the Arabic definite article {al-} is completely elided before the coronal sounds (/ʃ/, /ð/, /θ/, /s/, /s/, /d/, /d/, /n/, /z/, /z/, /θ/, /t/, /t /, and /r/). The elision of the sun letter /l/ and the intensity of the vowel sound shape the geminated coronal sound.

In addition, the study of emphatic assimilation across morpheme boundaries, based on a list of 86 words uttered by 12 native speakers of Jordanian Arabic, recorded and acoustically analyzed in Praat, showed that the phoneme /t/ undergoes total emphatic assimilation when followed by a coronal obstruent. When the definite article consonant /l/ is followed by any emphatic coronal sound, it undergoes total emphatic assimilation. Likewise, the phoneme /h/ undergoes total emphatic assimilation when preceded by an emphatic voiceless fricative or an emphatic voiceless plosive. The directionality of assimilation across morpheme boundaries is either progressive with the suffix /-h/ or regressive with the prefixes /t-/ and the definite article final consonant /l-. Emphasis was found to be an important feature that correlates with assimilation (Al-Deaibes, Jarrah, Al-Shawashreh & Alsharefeen, 2022).

Although the definite article {al-} in Jordanian Arabic has grammatical functions unrelated to its canonical use, it also has semantic functions. It is optionally attached to nouns with semantically indefinite referents, but obligatorily prefixed to nouns in indefinite environments and is used in other structures irrelevant to in/definiteness. Jaber, Al-Momani and Omari (2022) referred to the asymmetrical distribution of *al-N* and bare *N* in the Jordanian dialect. They argued that although it very often marks definiteness, the presence of *al* may not function as a pure marker of semantic definiteness. This means that the definite article *al* in Jordanian Arabic can be found in definite and indefinite environments.

Moreover, the definite article in Arabic is used for formal purposes. The definite article and the nunation suffix {-n} manage the information flow in a sentence through maintaining accepted informativity balance. Jarrah and Zibin (2016) asserted that nunation stimulates the speaker to add information about indefinite nouns. This information triggered by nunation is called "balancing

materials", which aim at restoring sentence acceptability due to the use of indefinite nouns. Balancing materials can be semantic and formal. The definite article is needed when a speaker adds semantic and formal balancing materials. Here, the definite article resolves the tension of adding information about the indefinite nouns and refrains from doing so (Jarrah & Zibin, 2016).

A second line of research in the Arabic language literature is the English-Arabic transliteration of personal names on Facebook. A study by Al-Jarf (2022b) analyzed variant English transliteration of the same Arabic personal names. The researcher found that 59% of the Arabic names have two variant transliterations in English and 26% have three. In 97% of the names, the variants differ in how the vowels/diphthong are represented in the English transliteration because Arabic and English differ in their vowel systems. Arabic consonant sounds for which two English graphemes exist were spelled differently. In 18% of the names, Arabic speakers transferred the Arabic spelling to the English transliteration. The short vowels were not represented in the English transliteration. In 15%, the subjects transliterated their names the way they pronounce them in their local dialect (*El-Garf in Egypt; Aljerif in Syria and Aljuruf in Palestine*), not as the name is pronounced in Standard Arabic.

In a second study, Al-Jarf (2022a) examined how Arabic native speakers transliterate personal names with geminates to English on Facebook. Results indicated that one third of the Arabic name tokens with geminates were represented by double consonants in the corresponding English transliteration; in 41% of the name tokens, the geminate was represented by a single consonant in the corresponding English transliteration; and in 26%, a single consonant was doubled in the corresponding transliteration, although the Arabic name has no geminates, and the consonant is pronounced as a single phoneme. Arabic speakers tended to transfer the spelling of Arabic geminates into a single consonant in English because Arabic geminates are spelled with a single consonant with a germination diacritic *◌◌* that is not usually shown in the written form of the words used by Arab adults. They also overgeneralized double consonants in the English transliterations of Arabic names that are pronounced with a single consonant phoneme.

As far as the Arabic definite article is concerned, Matushansky (2006) provided a morpho-syntactic analysis of the use of the Arabic definite article {al-} with proper names cross-linguistically and intra-linguistically. She based her analysis on the m-merger (cyclic morphological operation that takes two syntactic heads in a certain configuration and returns one syntactic head¹) that allows us to combine morphological and syntactic constraints on the behavior of the definite article in proper names. At the syntactic level, the definite article {al-} can be m-merged with the proper name under strict head-head adjacency. At the morphological level, the m merger can be conditioned by the lexical semantics of the stem and is subject to exceptions with certain roots (e.g., *the Sudan*). A functionalist explanation is that being definite by default, proper names do not need to be marked so.

To summarize, the literature review shows few studies that investigated issues related to the Arabic definite article {al-}, especially assimilation, compared to other grammatical structures in Arabic. Furthermore, the literature review showed lack of studies that explore the English transliteration of the Arabic definite article {al-} particularly when attached to Arabic proper nouns. Therefore, this study aims to explore the following: (i) How native speakers of Arabic transliterate their first and last names containing the definite article {al-} to English on Facebook. (ii) What variations exist in transliterating the definite article, which is usually attached to the word in Arabic script. Do native speakers of Arabic transliterate it as a separate/detached morpheme? Do they attach it to the name, hyphenate it, spell the name with upper- or lower-case initial consonant of the noun after {a-l}? (iii) How they transliterate {al-} before sun and moon letters in their names. Do they geminate sun letters in the names that follow the definite article? (iv) Which strategies do they use in transliterating names with a definite article? Do their transliterations reflect how Arabic native speakers pronounce the definite article in their local dialect or Standard Arabic? Do they transfer the spelling of their names to English by not showing geminated consonants after the definite articles?

This study will focus on how native speakers of Arabic transliterate the definite article itself, its different pronunciations and the initial consonant in the name that follows it. It will not focus on aspects such as errors and variations in transliterating vowels and/consonants in their names on Facebook.

2. Data Collection and Analysis

The author downloaded her current friends' list, and friends that she deleted or blocked from Facebook. Names spelled in Arabic, and duplicates of the same first and last names (as some Facebook users have more than one account) were removed. Names of foreign friends from Europe, the USA, China, Japan, Thailand, Vietnam, India and others; those written in other alphabets such as Bosnian, Russian, Uzbek, French, Hindi, Vietnamese, Thai; initials, and abbreviations (*Moh, Mhmd, Syr, Mis, Dr, Mr, Ab*); nicknames (*Yoka, Saso, Soso, Zizi, Zozo, Rose Sky, Trainer*); and duplicate names were excluded. Arabic names transliterated by non-native speakers of Arabic such as Malaysians, Indonesians, Uzbek, Kazakh, Bosnians, Bangladeshi and/or any other nationality that uses

¹ <https://www.cambridge.org/core/journals/english-language-and-linguistics/article/proper-name-compounds-a-comparative-perspective/C3D77EE6DD1750B732CF166F4424F625>

Arabic names were not included in the sample. Thus, the final pool included 641 unique Arabic names with the definite article {al-} and its variants and 1207 occurrences (repeats) of those names as the same last names are used by different persons belonging to the same family). All first names and surnames were transliterated by educated native-Arabic speakers such as instructors, students, computer scientists, doctors, lawyers, journalists, and others. The subjects come from different Arab countries (Saudi Arabia, Egypt, Yemen, Palestine, Jordan, Lebanon, Syria, Iraq, Tunisia, Algeria, the Sudan, Kuwait, Qatar, Bahrain, and Oman) and have different educational levels and different proficiency levels in English. Only Arabic personal names containing the Arabic definite article or any of its spoken variants transliterated to English graphemes were compiled and analyzed. Transliteration anomalies of vowels and consonants that do not exist in English, names with geminate consonants or compound names are excluded as they are not the focus of the current study. Only geminated/nongeminated consonants that directly follow the definite article are included in the analysis.

In analyzing the English transliteration of the Arabic definite article in personal names, a first name and a surname with a definite article was counted as two tokens, i.e., one each. Secondly, the written form of the definite article was classified into: (A) Cases with variants of the definite article such as {al-}, {el-}, {l-} and {il-}; (B) cases with the definite article attached to the name in which the definite article and the name are transliterated as a single lexical item, with the name spelled in lower case; (C) cases with a detached definite article in which the definite article and the name are transliterated as two independent morphemes; (D) cases in which the definite article and the name are hyphenated; (E) cases where the definite article is attached to a capitalized name; (F) cases in which the definite article is reduced to {l-}, i.e., the vowel in the definite article is deleted. Thirdly, the initial consonants following the definite article were categorized into names containing sun letters, those containing moon letters and whether the English transliteration takes into consideration the assimilation process associated with the sun letters.

Each variant transliteration of the definite article in the above categories was counted as a token. For example, a name like الجرف with variant transliteration of the article (*Al-Garf, El-Garf, ElGarf, Elgarf*) is counted as 4 tokens. If *Al-Garf, El-Garf, ElGarf, Elgarf* occurred 10 times each in the sample, they were counted as 40 occurrences (repeats). Vowel and consonant variations in the English transliterations such *Al-Garf, Al-Gurf, Al-Gourf, Al-Jarf, Al-Jorf* were ignored.

Since variant transliterations of the definite article in the same name might have one, two, or more differences (*Al-Garf, El-Garf, ElGarf, Elgarf, lgarf*), cases where {al-}, {el-}, {il-}, /{l-} are used, cases where the definite article is attached, detached, hyphenated, reduced, where the initial consonant is in upper or lower case, or where the name that follows the definite article begins with a sun or moon letters were counted as 1 token for each.

To describe the distribution of variant transliterations of the definite article, the percentages of names having the cases mentioned above, names with the highest number of variant transliterations and those with the highest occurrences were calculated.

To identify the strategies used in the variant transliterations the definite article in Arabic names, English transliterations were classified as follows: (i) those that match the pronunciation of the name in the user's local dialect, not Standard Arabic; (ii) those in which the definite article is not assimilated with the sun letters in the names, i.e., the /l/ is not deleted and the sun letter is not geminated, which reflects transfer of the Arabic spelling to the English transliteration as gemination of sun letters is only shown in Arabic pronunciation, but not Arabic spelling.

3. Results

Data analysis of the 641 unique names 1207 name occurrences (repeats) indicated that the Arabic definite article /al/ is attached to many Arabic surnames (*Aljarf, Al-Jurf*) and some first names (*Aljohara*). Results of the detailed analysis of the data presented in Table 1 show that the variant forms of the definite article are as follows: {al-} was used in 55% of the names; {el-} was used in 44%; reduced {l-} was used in 1% and {il-} was used in one name only.

In addition, Table 1 shows the following strategies that Arabic speakers in the current study utilized in the variant transliterations of the definite article: (1) In 54% of the names, the definite article is attached to the name, with the names spelled in lowercase (الجرف *Algarf, Aljarf, Aljarv, Aljerf, Aljorf, Aljorof, Aljourf, Aljrf, Aljurf, Aljuruf, Algref; الشيخ Alshekh; Alsayd, Elsayed, Alqudah; Alshareef*). (2) In 15.5% of the names, the definite article is detached from the name, i.e., spelled as an independent morpheme (الجرف *Al Girf, Al Jarf, Al Jorf, Al Jurf, Al-Jourf; القضاة Al Qudah*). (3) In 15.5% of the name is spelled with a capital letter although it is attached to the definite article (الجرف *AlJurf*). (4) In 13.5%, the definite article and the name are hyphenated (الجرف *Al-Garf, Al-Jarf, Al-Jorf, El-Garf, Al-Jurf*). (4) In 1%, the definite article is reduced to {l-}, the vowel in the definite article is deleted (الجرف *ljarf*).

Regarding the distribution of names with sun and moon letters, it was found that 40% of the names and 26.5% of the occurrences (repeats), the name that follows the definite article begins with a sun letter (ت /s/, /ð/, /θ/, /s/, /s/, /d/, /d/, /n/, /z/, /z/, /θ/, /t/, /t/, and /r/), as opposed to 60% of the names and 73.5% of occurrences (repeats) in which names

begin with a moon letter (ء ب ج ح خ ع غ ف ق ك م ن ه و ي /l/, /b/, /dʒ/, /h/, /x/, /ʃ/, /ɣ/, /f/, /q/, /k/, /m/, /h/, /w/, /j/) (Al-Jarf, 2003; Al-Jarf, 1990a; Al-Jurf, 1994).

Examination of the nouns containing sun letters revealed only two cases in which the /l/ was deleted from the definite article and the sun letter /t/ was double in *Attahr* and *Attayb*, taking into consideration that the data includes 319 occurrences of names with sun letters. The subjects transliterated almost all names in this category with no gemination of the initial sun letters, which probably indicates lack of knowledge that sun consonants should be doubled in the transliteration (See Table 1 for examples). This means that Arabic speakers in the study transliterated names that begin with sun and moon letters as they are spelled in Arabic, regardless of how they are pronounced.

Another important finding is that the personal name with the highest definite article variants and occurrences is الجرف with 9 variant transliterations of the definite article and 413 occurrences (34%) of the total name occurrences in the data. In 61% of the transliteration in الجرف, the definite article was transliterated with {al-} as it is pronounced in Standard Arabic, and in 39%, it was transliterated as {el-} as it is pronounced in the local dialects as bearers of the surname الجرف come from different Arabic countries and different regions within the same country. There was 1 case with a reduced definite article {-} (ljarf) and 1 case with {il-} (Il-Jorf. Attached {al-} or {el-} constituted 38% (الجرف *Algarf, Aljarf, Aljarv, Aljerf, Aljorf, Aljorof, Aljourf, Aljrf, Aljurf, Aljuruf, Algref*); capitalized names after {al-} and {el-} (37%) (الجرف *AlJurf*); detached {al-} or {el-} (17%) (الجرف *Al Girf, Al Jarf, Al Jorf, Al Jurf, Al-Jourf*); and hyphenated {al-} or {el-} (7%) (الجرف *Al-Garf, Al-Jarf, Al-Jorf, El-Garf, Al-Jurf*). Whether the name following the definite article is pronounced with a /j/ or /g/ as in the Egyptian variety, both are moon letters which do not require any assimilation and thus there is a grapheme-phoneme or pronunciation-spelling correspondence.

Table 1: Variant Transliterations of the Arabic Definite Articles with Examples

Type of Variants	Examples with {al-} and {el-}	%
Names with {al-}	<ul style="list-style-type: none"> Al Girf, Al Jarf, Al Jorf, Al Jurf, Algarf, Al-Garf, Aljarf, Al-Jarf, Aljarv, Aljerf, Aljorf, Al-Jorf, Aljorof, Aljourf, Jurof, Al-Jourf, Aljrf, Aljurf, Aljurf, Al-Jurf, Aljuruf 	55%
Names with {el}	<ul style="list-style-type: none"> El Garf, El Gorf, Elgarf, El-Garf, Elgorf, Elgrf, Elgurf, El-Sayed 	44%
Reduced article {-}	<ul style="list-style-type: none"> الجرف لجا , Lemdaoui المداوي , الأسد لاسد , العرايشي لاارايشي , Labdaa, Lakhال الخال , Lamري العمري , Lassoued الأسود , Leghrib الغريب , Lharraz الهزار , Larbie العربي 	1%
Names with {il-}	<ul style="list-style-type: none"> الجرف Il-Jorf 	1 case only
Names with an attached definite article	<ul style="list-style-type: none"> Aljrf, Aljuruf, Aljurof, Aljurf, Aljourf, Aljorof, Aljorf, Aljerf, Algref, Algarf, Alqudah, Alabed, Alabrashy, Alalwi, Alansary, Alansi, Alasad, Alazaz, Elgourf, Elgorf, Elgurf, Elgrf, Elgarf, Eladly, Elafany, Elalfy, Elamin, Elataar, Elazazy, Elbaz, ELbehely, Elbndarey, Elborgy, Elfayomy, Elgenedy, Elghndour, Elghondakly, Elhadary, Elhagan, Elhendawy, Elhusseniy, ELhwary, Elkharashi, Elkhateeb, Elmahdy, Elmalky, Elmarasy, Elmasry, Elomda, Elpashqawi, Elqassaby, Elquatan. 	54%
Names with a detached definite article	<ul style="list-style-type: none"> Al Qudhah, Al Qudah, AL Jurf, Al Jourf, Al Jorf, AL Jarf, Al Jarf, Al Girf, Al Aqad, Al Attar, Al Haj, Al Ibrahim, AL Khogany, Al Mahasnah, Al Mahdy. El Gorf, El Garf, EL Adawy, El Aswad, El Bahnasawy, EL Baqali, El Dessouky, El Dondety, El Kareh, El Masry, El Minyawy, El Qenawy, El Saeed, El Safiq, El Salahdar, El Seginy, El Shafay, El Zahy 	15.5%
Capitalized Names after the definite article	<ul style="list-style-type: none"> AlJurf, AlJorf, AlGerf, AlGarf, AlSheikh, AlShareef, AlSayed, AlDossary, AlDwaih, AlIomda, AlMalki, AlMarzooq, AlMazrou, AlMutairi, AlRasheed, AlSabbagh, AlSaleh, AlThunayan, AlZaidi, ElGarf, Eljurf, ElGarf, ElBatal, ElGindy, ElMasry, ElAhmed, ElAlfy, ElAzouz, ElBatal, ElDeiasty, ElGindy, AlJohara, ElHelbawey, ElSadat, ElSalim, ElShazly, 	15.5%
Hyphenated Definite article + name	<ul style="list-style-type: none"> Al-Jurof, Al-Jurf, Al-jerf, Al-Jarf, Al-garf, Al-qudah, Al-Attar, Al-Barghouthi, Al-Hakim, Al-juboory, Al-Jubori, Al-morsy, Al-omrani. EL-Garf, El-garf, El-Garf, El-jurof, El-Masry, El-Sayed, El-shenawy, El-Hofy, El-Jadili, El-Kholy, EL-madawy, El-mahalawy, El-mallah, El-shafey, El-Shamy, El-Sharaby, El-Sharnoby, EL-shayeb. 	13.5%

Names with initial moon letters after the definite article	<ul style="list-style-type: none"> Albyale, Alfaifi, Algammal, Alhasanat, Alhussain, Aljanabi, Alkasm, Alkiswani, Almoina, Alomgir, Alqattan, Alward, Elhusseniy, Al Bahri, Al Bashabsheh, Al Jasser, AL Khegany, Al Maani, Al Oboudi, AL-Omar, Alfaifi, Algammal, Al-Garni, Algazzar, Alhadi, Alhaisoni, Al-Hakim, Al-Hamdan, Al-Jamous, Aljanabi, Aljarrah, Al-Jasser, Al-Essa, Al-Fadda, Alfaifi. Elokby, Elokda, Elpashqawi, Elqassaby, Elquatan, Elhayes, Elhefnawy, ElHelbawey, Elhelw, Elhenawy, El-Hofy, Elhusseniy, El-Jadili, Eljuhane, E Ikabary, Elkady, ElKalil, Elkassas, Elkharashi, Elkharbotly, Elkhatieb, Elkhayat, Elkhoby, Elmadawy, Elmahdy, Elmalah, Elmalk, Elmalky, Elmansory, Elmeilegy, Elmeslemany, Elmezien, ElMohamady, Elmorabet, Elmrwany 	60%
Names with initial sun letters after the definite article	<ul style="list-style-type: none"> Aldawly, Aldeeb, Aldghamy, AlSabbagh, Alsatoof, Alsaawaf, Alsayd, Alshaikh, Alregeb, Alshareef, Alshreef, Alsubaie, Alzubaidi, Alzubaidy, Asayed, Alshiref, Al Dorzi, Al Riyashi, Al Ruzz, Al Sohbani, AL Zaidi, Al-Refaey, Abu Al-Ruz, Al-Najjar, Al-Shorman, Al-Tamimi, Abo Al-Nagah Edaros, Idabaa, Eldabbakeh, Eldeeb, ElDeiasty, Eldesoky, Elnaggar, Elnaggar, Elneel, Elngar, Elromy, Elsabagh, Elsaheed, Elsafty, Elsaied, Elsawy, Elsayed, Elshafey, Elsebaee, Elsebaee, Elshahawy, Elsharawy, ElShazly, Elshebiny, Elshek, Elshiref, Elsokary, Êtâhêr, Eltanekhy, Eltayeb, Elzahar, Elzahraa , Elzanaty, Elzawely, Elzhar, Elzoz, Elnagar 	40%

4. Discussion

Native Arabic speakers in the sample who translated the definite article as {al-} transliterated it as it is pronounced in Standard Arabic. Those who transliterated it as {el-} transliterated it as the name is pronounced in the subjects' local dialects such as the Egyptian, Jordanian and Palestinian Arabic. Similarly transliterations with the reduced article {l-} in Lemdaoui, المداوي Laaraiche العرايشي, Lakhali الخال, Lamri العمري, Lassoued الأسود, Leghrib الغريب, Lharraz الهراز reflect their own pronunciation of the Article in the Moroccan, Algerian and Tunisian dialects. Even in Arabic, the name is spelled without the vowels a probably because this is how those names are spelled in French, and those subjects just transferred the French spelling to English.

Although the Arabic definite article is a bound morpheme that is always attached to the noun, Arabic speakers in the current study utilized 4 strategies in transliterating the Arabic definite article to English. Those who spelled the definite article and the names as one word, transferred the Arabic spelling to English as in Arabic they are as one word. Those who spelled the article and name as one word but capitalized the name also transferred the Arabic spelling but felt that the article and the proper name are 2 different entities. However, writing a capital letter in word boundary, as in AlJurf, is not very common in English except in proper names such as *McDonald* and *O'Connor*. Those subjects who transliterated the definite article and noun as two detached morphemes actually considered the {al-} and {el-} as a prefix that should be added to the proper noun. Those who hyphenated the definite article and the proper noun probably wanted to show that they are separate entities and, at the same time, should be spelled together as they constitute one name.

In transliterating the initial consonant of the noun that follows the article, Arabic speakers had no problem converting the moon consonant letters (ء, ح, ج, ب, ع, غ, ف, ق, ك, م, ن, و, ه, ي, ر, ل, /b/, /dʒ/, /h/, /x/, /ʃ/, /ʒ/, /f/, /q/, /k/, /m/, /h/, /w/, /j/) to their English equivalents and substituting those consonant sounds that do not exist in English with others. No assimilation takes place in the definite article and the initial consonant of the noun is not geminated. Nevertheless, when the definite article is followed by a noun with an initial sun (coronal) consonant (ن, ل, ظ, ض, ص, ش, س, ز, د, ذ, ت) /ʃ/, /ð/, /θ/, /s/, /z/, /d/, /d/, /n/, /z/, /z/, /θ/, /t/, /t/, and /r/), assimilation of adjacent sounds takes place in which the /l/ of the definite article is deleted and the initial sun consonant is geminated. This assimilation takes place in pronunciation only but not in the written form of the word. Representation of the assimilation process in the English pronunciation is almost absent in all nouns with an initial sun letter with the exception of 2 cases out of 319 (*Attahr*, *Attayb*). This reflects Arabic speakers' weakness in grapheme-phoneme correspondence in Arabic as well as in English although children are introduced to the concept of sun and moon letters in the early stages of reading development (Al-Jarf, 2018; Al-Jarf, 2007a; Al-Jarf, 1995c; Al-Jarf, 1992; Al-Jarf, 2005a; Al-Jarf, 2005b).

This finding is consistent with findings of other studies in the literature by Kambuziya (2007), Dawood and Atawneh (2015), Freeman (2016), Al-Deaibes, Jarrah, Al-Shawashreh and Alsharefeen (2022), and Alteyp and Alteyp (2020) who indicated that before sun consonant, an assimilation process takes place in which /l/ is deleted from the definite article and the sun consonant is geminated. In addition, Al-Deaibes, Jarrah, Al-Shawashreh, Alsharefeen (2022) demonstrated that when the definite article consonant /l/ is followed by any emphatic coronal sound, it undergoes total emphatic assimilation. The phoneme /h/ undergoes total emphatic assimilation when preceded by an emphatic voiceless fricative or an emphatic voiceless plosive. The directionality of assimilation across morpheme boundaries is either progressive with the suffix /-h/ or regressive with the prefixes /t-/ and the definite article final consonant /l-/. Emphasis was found to be an important feature that correlates with assimilation

Similarly, findings of the current study are consistent with findings of prior studies with Arab EFL college students who transfer the Arabic spelling system to English. They tend to spell English words the way they pronounce them (Al-Jarf, 2019; Al-Jarf, 2011a; Al-Jarf, 2010; Al-Jarf, 2009; Al-Jarf, 2008a; Al-Jarf, 2008b, Al-Jarf, 2008c; Al-Jarf, 2007b; Al-Jarf, 1999).

5. Recommendations

Native-Arabic speakers on Facebook seem to transliterate the definite article in Arabic name to English in a variety of ways: Attached, detached, capitalized, hyphenated and reduced; and transliterate the definite article before the sun and moon letters in the same way ignoring the consonant assimilation process associated with sun letters. To minimize the variations in transliterating the Arabic definite article in Arabic names to English, this study recommends that, the definite article be spelled as part of the word in the case of moon letters following the articles as in *Aljarf, Algudah, Alghamdi, Alhussain, Aljanabi, Alkasm*, as the definite article is spelled as part of the noun in Arabic. In the case of sun (coronal) letters that follow the definite article, the English transcription should show the change that takes place as a result of the assimilation process in which the /l/ is deleted from the definite article and the sun consonant is geminated. The transliteration should take into consideration the mandatory doubling of all sun consonants to enable non-native speakers of Arabic, as well as Arabic-native speakers, who are not familiar with surnames in other Arabic countries, to pronounce the name accurately with a geminated sun consonant especially in the case of names containing the /ʃ/, /θ/ and /ð/ sounds because the English grapheme-phoneme correspondence rules do not allow a double sh (shsh) or th (thth). This means that “الداود الدوسري النجار السالم السلامة الشيخ الشريف الطاهر التميمي الثنيان الزايدى الزهراني السيد الذيب” should be transliterated as *Ad-Dawood, Ad-Dosari, An-Najjar, As-Salem, As-Salama, Ash-Shaikh, Ash-Shareef, At-Taheer, At-Tamimi, Ath-Thunayyan, Az-Zaidi, Az-Zahrani, As-Sayed, and Ath-Theeb*. This way non-native speakers will pronounce them with a geminated consonant across word boundary.

When teaching the transliteration of the Arabic definite article in Arabic names, mind-mapping software can be utilized to show the sun-moon letter dichotomy in pronouncing and spelling Arabic names and how nouns in each group should be transliterated with examples of names containing all sun letters especially /ʃ/, /θ/ and /ð/ (Al-Jarf, 2011b).

When social media Arab users transliterate the definite article in their names to English, the transliterated name should be easily recognized and pronounced by both Arabic-native speakers who have some knowledge of English and non-native speakers who are not familiar with Arabic names, especially those with geminated word-initial consonants following the article. Therefore, this study recommends the standardization of the English transliteration of the definite article in Arabic personal names. To achieve that goal, an experimental study can be conducted in which non-native speakers of Arabic are asked to read the variant transliterations of the same Arabic name with a variety of transliterations of the definite article and find out how they pronounce each variant in order to choose the transliteration that best corresponds with the correct pronunciation of the definite article in Arabic names especially those containing sun letters. The English transliteration that is closest in pronunciation to the Arabic pronunciation should be considered the standard transliteration. Facebook can be fed with those standard transliterations which can be used to prompt native speakers of Arabic and suggest the correct English transliteration of the definite article in their names when they create their Facebook pages.

Conflicts of Interest: The author declares no conflict of interest.

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