Cultural and linguistic guidelines for language evaluation of Arab-American children using the Clinical Evaluation of Language Fundamentals (CELF)

Reference this material as**:** Khamis-Dakwar,R., Al-Askary,H., Benmamoun,A., Ouali,H., Green,H., Leung,T., & Al-Asbahi,K. (2012, September 30). *Cultural and linguistic guidelines for language evaluation of Arab-American children using the Clinical Evaluation of Language Fundamentals (CELF).Available from* **doi:xxxxx**

Part I: The Cultural and Linguistic Background of Arab-Americans

Introduction

Based on the 2000 census, Arab Americans comprise 0.42% of the population in the United States (U.S.). The Arab-American population in the United States has been showing a steady increase since the 1980s (US. Bureau of the Census, 2005)[1]. Similar to other minority populations in the U.S., there has been a corresponding increase in the number of children referred for language assessment from this specific cultural and linguistic background. It is one of the top ten languages among English Language Learners (LLEs) in the U.S. (Batalova & Margie, 2010).

Arab-Americans, as part of the diverse Arab population, compose a heterogeneous group; they come to the U.S. from countries in the North African region (such as Morocco), the Mediterranean region (such as Jordan), or the Arab Gulf region (such as Qatar) (Al-Hazza & Lucking, 2005) and may belong to a variety of religious faiths such as Islam, Christianity, Druze or Judaism. Despite these differences, Arab-Americans share historical memories, cultural values, cultural practices and Arabic as a native language [2](Khamis-Dakwar & Froud, 2012).

Most of the literature guiding Speech-Language Pathologists (SLP) in the assessment and treatment of Arab-American children is based on documented experiences from working with children in the Arab world, specifically Saudi-Arabia (e.g. Wilson, 1996, 1998). This information might have limited applicability due to the diversity of the Arab-American population and the specific differences between Arab

[1] These results are based on official Census Bureau estimates, which are debated by Arab-American institutions. The claim is that, since the census does not have an Arab category as an option, the real size of the Arab-American population is undercounted (Zogby, 2001).

[2] Note that Arabic-speaking communities exhibit *diglossia*, a sociolinguistic situation in which two language varieties exist: a "low" language variety, which is the spoken dialect acquired naturally and used for daily communication; and a "high" language variety, the Modern Standard Arabic (MSA), which is learned in school and is used for reading and writing and in formal settings. Even though all Arabs share Arabic as a native language, the native language dialects differ from one region to another.

children raised in the U.S. and the Arab world. Such differences may include but are not limited to: a child's amount of exposure to Arabic, available formal teaching of Arabic, exposure to one or more of the various Arabic spoken dialects, and identity differences. In the first part of this resource, we give a general overview of the Arab population in the U.S. and we describe dialectal differences within Arab-American populations that are likely to impact language assessment and SLP intervention services for Arab-American children. More specifically, we provide a brief overview of the linguistic features of the Arabic dialects in the Gulf, North Africa, and the Levant. We later discuss the sociolinguistic phenomenon of diglossia, its relationship to Arabic literacy in Arab-Americans, and the more specific need to distinguish between heritage and non-heritage students in assessing speech-language and literacy abilities of the Arab-American child. This resource will also provide basic information on the status and development of the field of speech-language pathology in the Arab world and in the U.S. with a focus on its effect on SLP services to Arab-American students. Finally, we provide basic linguistic guidelines for language evaluation of Arab-American children using the Clinical Evaluation of Language Fundamentals Fourth Edition (CELF-4).

This resource has been developed with the support of an ASHA grant program on multicultural activities. I very much appreciate the professional support that has been granted to me through this funding, and I am grateful for ASHA's commitment to enhance SLP assessment of children from culturally and linguistically diverse (CLD) populations. Moreover, I am particularly grateful to the esteemed linguists and SLPs who contributed to this resource. This project is a testimony to the power of multidisciplinary collaboration, as combining knowledge from the fields of speech-language pathology and

linguistics has the potential to inform how speech and language clinical evaluations are conducted. A special thanks to Dr. Abbas Benmamoun, a revered linguist in the study of Arabic linguistics, who in spite of his busy research lab and life, has generously contributed to this resource by writing on Egyptian and Levantine Dialects. I would also like to say thank you to Dr. Hamid Ouali, who shared his expertise with us and prepared an extraordinary linguistic resource on Moroccan Arabic in contrast to English features; as well as to Dr. Tommie Leung for his exceptional contribution on Emirati Arabic; Heather Green, CCC-SLP for her assistance in data collection and analyses, and finally a special thanks to Dr. Heidi Alaskary, CCC-SLP for her contribution on cultural background and guidelines as well as her input and support along the way. Please, feel free to contact me at ASHAmulticulturalArabic@gmail.com with comments and suggestions as this is a continually developing resource.

Section I: Introduction to Arab Americans

There are an estimated 1.3 million Arab Americans in the United States (U.S. Census Bureau, 2000) [3]coming from various countries of origin, with different religious affiliations[4] (Muslims, Christians, Druze, and Jews), and of various socio-economic status[5]. It is believed that all individuals in this population share Arabic as their native language as well as common Arab cultural values. Nevertheless, there are vast linguistic and/or cultural differences within and among the Arab individuals from different countries living in the US.

Ethnicities and U.S. Geographical Region

Arab-Americans come from 22 countries and the Palestinian occupied territories. These countries are usually divided into "Machrek" (Eastern), "Maghreb" (Western) and gulf regions. Generally speaking, "Machrek" refers to countries to the east of Egypt and north of the Arabian Peninsula, "Maghreb" refers to countries west of Egypt in North Africa, and gulf refers to countries bordering the Persian Gulf.

The Arab-American community is a mosaic of the Arab world and its linguistic and cultural diversities. According to the 2000 U.S. Census, the largest groups of Arab Americans identified themselves as: Lebanese (more than 28.8% of the total Arab-American population), Egyptian (14.5%), Syrian (8.9%), Palestinian (7.3%), Jordanian (4.2%), Moroccan (3.6%) and Iraqi (3.5%). Yemeni, Kurdish, Algerian, Saudi Arabian, Tunisian, Kuwaiti, Libyan, Berber, or other specific Arab ancestries accounted for one

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[3] Zogby 2001 suggests that census figures undercount the Arab-American population since there is not an Arab category o ption in the census, estimating that there are actually more than 3 million Arab Americans.

[4] All Arabs are influenced by Islam, though not all Arabs are Muslims (Fellure & Thornton, 2009).

[5] This is contrary to the popular portrayed image of Arabs as billionaires in popular entertainment media (Shaheen, 1984, Erickson & Al-Timimi, 2001)

percent or less of the total Arab population each.[6] Table 1 lists the percentage of Arab-Americans coming from Arab countries around the world.

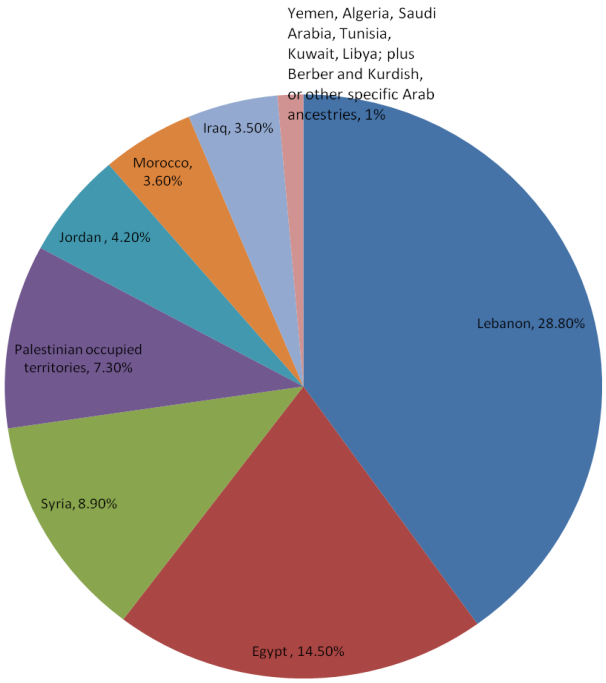

Table 1: Arab Americans and country of origin (Source: U.S. Census 2000).

As of the 2000 U.S. Census, 0.6 percent of the total Northeastern population was of Arab descent, whereas 0.3 percent of the total southern population was of Arab origin. The 10 cities with the largest Arab populations were: New York, Dearborn, Los Angeles, Chicago, Houston, Detroit, San Diego, Jersey City, Boston, and Jacksonville.

Religion

Although the majority of Arabs in the Arab world are Muslims, only 23% of Arab-Americans are Muslims, while 77% are Christians (Zogby, 2001)[7]. The Arab world population also consists of Arab Druze and Jewish people living in Arab countries.

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[6] Note that Kurds, Turks, Iranians, Afghans, Armenians or Pakistanis are not considered Arabs.

[7] It should be noted that these percentages may change with the different waves of immigration. For example, before 1950s, 90 percent of Arab Americans were Christians.

Accordingly, SLPs working with Arab-American individuals and families should be aware of all religious affiliations and should not assume a Muslim identity as the default religion.

Education and Socioeconomic Status

Based on the U.S. Census, Arab-Americans are reported to have a higher level of education in comparison to the general U.S. population, with more than 40% of Arab-Americans having at least a bachelor's degree, compared to only 24% of other Americans (Brittingham & De la Cruz, 2005). Given these reported high educational achievements of Arab-Americans in comparison to the national average, there is a corresponding higher median income of Arab-American households ($52,300) in comparison to the national median ($50,000) based on the U.S. Census. However, despite higher median incomes for Arab-Americans, there are also reports of higher poverty rates in the Arab-American population (17 percent) in comparison to that of the total U.S. population (12 percent) (Brittingham & De la Cruz, 2005).

Special Considerations

After the 9/11 attacks and due to the current political climate, Arab-Americans report being fearful of hate crimes, anxious about their future and safety, a loss of a sense of community, and feeling isolated and stereotyped (Abu-Ras, 2008). Thus, Arab-Americans may show psychological distress and depression similar to trauma responses (Abu-Ras, 2008; Padela, & Heisler, 2010). Due to this climate, Arab-Americans may be hesitant to trust health and education providers. Therefore, it is imperative for clinicians to be aware of these possible barriers and to acknowledge the fears and mistrust that may affect assessment and/or therapy dynamics.

To conclude this section, SLPs need to expand their knowledge beyond the generalizations and stereotypes that are typically associated with Arab-Americans. Taking into consideration the diversity among the Arab-Americans in terms of ethnicity,

place of living, religion, and socioeconomic situation will enhance clinician sensitivity and orientation for effective service implementation.

Section II. Arabic language:

Similar to the diversity within the Arab population discussed in the previous section, the Arabic language is characterized with high variability as well. Many Arabic textbooks maintain that there is only one true Arabic: Modern Standard Arabic (MSA) or Classical Arabic (CA). This doctrine does not take into account the existence of diglossia in Arabic speaking communities. Diglossia refers to a sociolinguistic situation marked by the availability of *High* (CA or MSA) and *Low* language varieties (local or regional dialects) that are in complementary functional distribution (e.g., Ferguson, 1959). CA is the form of Arabic that is used in the *Qur'an*, and still permeates all religious ceremonies, and MSA is "the written language of contemporary literature, journalism, and formal education … [it] is the standard written Arabic of the entire Arab world, linguistically unifying it today as CA once did" (Abu-Melhim, 1992, p. 3). CA and MSA are taught through formal education.

Spoken regional dialects termed by Ferguson (1959) as low language varieties are used for daily communication and are acquired naturally as the mother tongue (Ferguson, 1959). There are reports of a fourth form of Arabic; the Educated Standard Arabic (ESA) or Common Educated Arabic that "draws upon both MSA and Colloquial Arabic" (El-Hassan, 1978, p. 32). Arab speakers use this form of Arabic when conversing with one another in educational contexts.

The focus on the high language variety in the traditional linguistic study of Arabic has impacted speech and language services. For example, the New York State Education

Department (NYSED) Bilingual Education Assessment (BEA) is a language proficiency test. The BEA is a requirement of the bilingual extension for childhood educators, special educators, and SLPs and examines proficiency in MSA instead of the language variety used for daily communication. Similarly, Patel & Khamis –Dakwar (2005) point out that clinical resources such as the picture communication system (Johnson, 1981,1985) are presented in MSA, which is not the language of communication for Arabic-speaking children and may even be unavailable to Arab-American children. There is a general consensus that the differences between MSA and spoken Arabic are manifest in all language domains (phonology, morphology, syntax, semantics and pragmatics). Due to the linguistic and acquisition differences between spoken Arabic and MSA, some researchers suggest that MSA can be viewed almost as a second language (Ayari, 1996; Eviaar & Ibrahim, 2000). Recent neurophysiological studies investigating neural responses to diglossic codeswitching show that codeswitching between the two language varieties at the lexical level elicited brain responses reported to be found for switches between languages (such as English and Spanish) in the literature (Khamis-Dakwar & Froud, 2007; Khamis-Dakwar, Boudella & Froud, 2009).

Based on the literature on Arabic diglossia and the nature of acquisition of MSA it can be concluded that MSA competence should not be automatically assumed for Arab-Americans since it is taught only through formal education, which is not available to all Arab-Americans.

Arabic Dialects

Spoken Arabic varies widely along geographical, religious and socio-economic lines from one Arab country to another and from one community to another within the

same country (Holes, 1995). For example; Arabic dialects can be divided into different geographical categories such as Egyptian, Syrian, and Iraqi dialects. These dialects can be further broken down into subdivisions. For example, the Egyptian dialect can be divided into three types along geographical lines: Urban (e.g. Cairo and Alexandria), rural (mostly in Upper Egypt), and Bedouin dialect (in the Sinai and Western Egyptian desert). Moreover, more variety exists within each dialectal-speech community on the basis of gender and other social factors (Holes, 1995; Al-Toma, 1969).

There are many different types of major Arabic dialects. A few examples of Arabic dialects that differ from country to country are: Algerian Shahran Arabic (spoken in Algeria), Baharna Arabic (spoken in Bahrain), Chadian Arabic (spoken in Chad), Cypriot Arabic (spoken in Cyprus), Dhofari Arabic (spoken in Oman), Egyptian Arabic (spoken in Egypt), Gulf Arabic (spoken Iraq and the Arabian Peninsula), North Levantine Arabic (spoken in Syria), South Levantine Arabic (spoken in Jordan), Najdi Arabic (spoken in Saudi Arabia), and Shihhi Arabic (spoken in the United Arab Emirates)(Ethnologue, 1997). While all these dialects are sub-forms of Arabic, it is important to note that "one characteristic of these colloquial varieties [dialects] is that they may not be mutually intelligible to speakers of other regional colloquial [dialects]…[and that] sometimes even within the boundaries of a particular country [these dialects] are not mutually intelligible" (Abu-Melhim, 1992, p. 4 & 7). To further illustrate the mutual unintelligibility of the language Al-Ani (1970) stated "the differences in the phonology, morphology, and syntax of these dialects are often so great that verbal communication between an illiterate Egyptian and an illiterate Iraqi, whether they be towns people or peasants, is difficult if not impossible" (p.18). This highlights the need

for dialectal differences to be considered when making decisions regarding language/dialect of assessment and intervention.

For the sake of this resource, we will be providing general linguistic information about the following dialects: Emirati, Egyptian, Levantine, Moroccan, and Yemeni. Please note that this is a very general description provided to assist the SLP in evaluating children's English abilities and the possible transfer effect of the different Arabic dialects on English production.

Gulf Arabic. Gulf Arabic (GA), known as 'al-khaliji', refers to the particular Southern Arabic dialect as widely recognized in countries around the Arabian Gulf, i.e. Kuwait, Eastern Saudi Arabia, Bahrain, Qatar, Bahrain, Oman, the United Arab Emirates, South-western Iran and Zubair area of Iraq (Lewis 2009). Mutual intelligibility between the varieties of GA is high, if not total, while there is slight variation in terms of allophonic variations and special vocabulary (Holes 1990, AVIA).

Phonetics and phonology. The following are a list of GA phonemes, based on the variety as spoken in the United Arab Emirates. Arabic scripts are also shown for further references. Compared with Modern Standard Arabic, in GA, a single Arabic letter may correspond to more than one phonemic transcription and two (or more) Arabic letters may share the same pronunciation. The sounds highlighted in blue are not represented in the English inventory (adopted primarily from Ntelitheos 2011 and AVIA) and the consonants that are highlighted in green represent those that occur in English but not GA.

IPA	Arabic	IPA	Arabic	IPA	Arabic	IPA	Arabic
/θ/	ث	/g/	ق	/ɣ/	غ (Kuwait) ق	/n/	ن
/ð/	ذ	/k/	ك	/h/	ه	/sˤ/	ص

/zˤ/	ظ	/ʔ/	أ*(hamza)*	/ħ/	ح	/s/	س
	ض	/q/	ق	/ʕ/	ع	/ʃ/	**ش**
/b/	ب	/ɡ/	**ك**	/l/	ل	/r/	ر
/t/	ت	/dʒ/	**ج**	/lˤ/	ل	/w/	و
/tˤ/	ط	/f/	**ف**	/z/	ز	/j/	**ي** **ج** (Kuwait) ق
/d/	د	/x/	خ	/m/	م		
/i/		/i:/		/ej/ or /aj/			
/a/		/a:/		/aw/			
/u/		/u:/					
/ə/		/e:/					
		/o:/					
/p/		/ʒ/					
/v/		/ŋ/					

Syllabic Structure

The prototypical syllabic structure is (C)CV(:)(C)(C) and the vowel can be long or short. The onset clusters usually occur when a prefix/proclitic is attached to the host, e.g. [jħajjiik], [sʕiid], etc. Clustered codas are frequent, eg. [bint] and gemination is possible and widespread, e.g. [ɡʃətˤtˤ], [lˤlˤah], etc.

Morphology. Similar to other Arabic dialects, GA nouns do not exhibit morphological case, whereas gender, number and definiteness can be expressed by bound morphemes. An asymmetry of agreement is expressed by nouns and verbs, with nouns showing all numbers (singular, plural, dual), whereas verbs do not exhibit dual agreement (Holes 1990).

In Arabic, both ‘broken’ and ‘sound’ plurals can be found. Examples of broken plurals involve internal vowel change, e.g. [suuq] ‘market’ vs. [ʔaswaaq] ‘markets’. Compared with other Arabic dialects, GA is relatively impoverished in the use of modal or temporal markers. In addition, while a particular morpheme, e.g.. *b*-prefix, can be found in other Arabic dialects (e.g. Egyptian), its semantic meaning is different. For

instance, in GA, the *b*-prefix expresses future and intention, which is not found in other dialects (Persson 2008).

Syntax. The unmarked word order of GA is SV-DO-IO-Adv. Word order change is allowed for the purpose of focus or topicalization. This is similar to other Arabic dialects. Most grammatical properties of GA are similar to Modern Standard Arabic (MSA). In particular, the following morphosyntactic properties contrast significantly with those in English. First across Arabic dialects, the expression of perfective (cf. English 'John *has eaten*') and imperfective (cf. English 'John *is eating*') aspect in GA, though mutually distinct, is morphologically regular. In addition, subject-verb agreement in terms of number and gender depends on the identity of the subjects, e.g. animacy (Holes 1990).

Pronoun clitics. In GA/MSA, object pronoun clitics are suffixed to nouns (in possessives), verbs (as direct objects), prepositions (as direct objects), and complementizers (as subjects of the embedded clause) (Holes 1990). That is to say, unlike English (e.g. 'John likes *her*'), object pronouns cannot stand on alone.

1st person sing.	/-i/, /-ni/, /-nu/	plural	/-na/, /-ne/
2nd person masc. sing.	/-k/, /-ək/	Plural	/-kum/
2nd person fem. sing.	/- ʧ/, /-iʧ /	Plural	/-kin/
3rd person masc. sing.	/-a(h)/, /-e(h)/, /-u(h)/	Plural	/-hum/
3rd person fem. sing.	/-ha/	Plural	/-hin/

Negation. GA's negation is typically different from that of MSA. Instead of MSA 'laysa' and various tenses on 'laa' (e.g. *laa*, *lan*, *lam*), GA productively uses 'ma' as the negative marker. Similar to other Arabic dialects, 'ma' does not take any tense marking, instead assuming different forms depending on to what it is prefixed. There exists a distinction between verbal negation and predicate negation, and moreover negation of

pronouns:

Verbal negation: [*ma*]-verb, e.g. [ma-araf] ‘I don’t know’
Predicate negation: [*mub*]-predicate, e.g. [mub-hini] ‘not here’
Nominal negation: [*miʃ*]-noun, e.g. [miʃ il-booʃ] ‘not the livestock.’
Pronominal negation: [*ma-b*]-pronoun, e.g. [ma-b-ana] ‘not me’

GA negation is different from other Arabic dialects (particular Moroccan and Egyptian) in that only a prefixal [ma] can be found across GA dialects, whereas in Moroccan/Egyptian Arabic, the combination (or discontinuous morpheme depending on the theory) [ma…shi] is productively used (Benmamoun 2000, Brustad 2000). It should be noted that in some particular GA dialects, e.g. Shehhi Arabic (spoken in some areas of Ras al-khaimah of the UAE, and some parts of Oman), the negative marker is ‘la’ and it is suffixed to (instead of prefixed to) the head, e.g. [*araf-la*] instead of [*ma-araf*], [*bint-la*] instead of [*mub-bint*] ‘not a girl’, etc (Leung 2009).

Construct State. One notable property in GA/MSA is its possessive construction, or famously called *iDaafa* ‘construct state’. It is formed by the configuration ‘possessed the-possessor’, in which the determiner attaches to the possessor (Holes 1990) in contrast to English that uses the possessive marker /s/.

(1) a. sayyaarat il-mudiir ‘car the-boss’ (the boss’s car)
b. muʃkilat il-ʤaamiʕ ‘problem the-university’ (the university’s problem)

Relative clause. Relative clauses in GA have the following properties: (i) they obligatorily require the presence of a resumptive pronoun, (ii) the relative marker [illi] is obligatorily required in the case of definite relatives, but absent in indefinite relatives. There is no indefinite marker in GA.

(2) a. mara zabbarat ʕala wildik. (indefinite relatives)
woman scolded-she on son-your ‘A woman who scolded your son’

b. l-mara illi zabbarat ʕala wildik. (definite relatives)
the-woman that scolded-she on son-your ‘The woman who scolded your son’

In daily conversation, however, there exist cases in which an indefinite head noun can be relativized by [illi], especially if the head noun expresses a high degree of specificity (e.g. indefinite specific) (Brustad 2000).

Wh-questions. Wh-questions in GA are similar to English in which the wh-word is placed sentence-initially. In some other cases, wh-words can be in-situ (echo-questions). Yes-no questions are created by rising intonation toward the end of the sentence. What is special about GA (and other dialects of Arabic) is the use of wh-cleft, i.e. a fronted wh-word is followed by a relative structure (signaled by the presence of the relative marker [illi]) (Aoun et al. 2010, Leung and Al-Eisaei 2010), e.g. (3b):

(3) a. ʃu ʔɛʃtr-ɛt ʔmɛs?
what bought-you yesterday ‘What did you buy yesterday?’
b. ʃu illi ʃtər-eet–ah ʔams?
what that bought-you-it yesterday ‘What did you buy yesterday?’
c. istaanastaw ween?
enjoyed-self-you where ‘you have a good time where?’
d. axuu-k Tallag zoojt-ah?
brother-your divorced-he wife-his ‘Your brother divorced his wife?’

Implications for clinical practice. Early Arabic learners of English may exhibit the following articulation and morphosyntactic differences due to transfer effects from Arabic to English. SLPs are encouraged to be cognizant of these differences in order to differentiate between a language disorder versus difference.

- Phonology
    - Substitution of consonants from the GA phonological inventory for English specific consonants. i.e. b/p, f or w/v, ʒ/ʤ, n/ ŋ

- Substitution of vowels from the GA phonological inventory for English specific vowels. This is due to the fact that English contains twice as many vowel sounds than are found in GA.
- Gemination, a prolonged production of a sound, sometimes referred to using the term "identical clusters" (Al-ani, 1970, p.77) is common in GA. Gemination could be mistaken for cluster reduction in the speech of speakers of GA and other Arabic dialects. It is important to distinguish between the presence of germination and cluster reduction in children's productions of English clusters (e.g SLPs need to discriminate between the production of /sso/ and /so/ for snow, or /læmm/ and /læm/ for lamp).

- Morphosyntactic
  - Several inflectional free morphemes in English are bound morphemes in GA. As a result some early learners of English may delete free morphemes. For example when asked the question, "Whose bear is this?", an early learner of English may answer "the boy" instead of "his".
  - GA lacks a possessive marker. This difference may be observed is the deletion of possessive markers (e.g. King crown for King's crown). It is also quite possible that GA speakers also use the periphrastic 'N1 of N2' construction in addition to the construct state 'N2 the-N1'. This exact statistical comparison is not clear yet and need to be addressed in a corpus study. However, it would be expected, that possessive constructions such as 'King's Crown' may become 'crown of king' or even 'crown belong king' for GA speakers of English.

- GA word order varies from that of English. In GA there are several accepted word order structures that may interfere with children's utterances. Moreover, the direction may be different in the two languages and a child may use the GA word order in English (e.g. "hat big" for "big hat"). Speakers from Ras al-khaimah of the UAE may suffix the negation marker instead of prefixing it (i.e. "this is mine not" for "this is not mine").
- Deletion of the relative marker in indefinite relative but not definite relative structures may be observed (e.g. In response to the question, "What do you want to be when you grow older?" the child may respond "An astronaut flies to the moon" for "An astronaut who flies to the moon.")
- GA learners of English may use in-situ question structures such as "You are playing what?" instead of "What did you play?"

North African Arabic. North African Arabic dialects spoken in the so-called Maghreb have a few linguistic differences among each other, but as a group they share a lot of linguistic features that set them apart from the "eastern dialects". The following is an overview of the main grammatical properties of these dialects. This section will outline phonetic and phonological features, discuss morphological properties, and summarize syntactic features of these dialects. A short comparison with English will be given at the end of each section highlighting differences between North African Arabic and English.

Phonetics and phonology. North African dialects retained similar phonetic inventory of Modern Standard Arabic. While Tunisian Arabic (TA) contains interdentals, Moroccan Arabic (MA) and Algerian Arabic (AA) do not. The following table shows the consonant inventory of North African dialects:

Consonants and vowels.

PLACE OF ARTICULATIION		MANNER OF ARTICULATION							
		Plosive		fricative		affricate		liquid	nasal
		-voiced	+voiced	-voiced	+voiced	-voiced	+voiced		
Labial			B		w				m
labiodental				f					
Dental	*plain*	t	D	s	z			l	
	Emphatic	tˤ	dˤ	sˤ	zˤ				
Inter-dental	*plain*								
	emphatic								
alveolar				ʃ	ʒ	tʃ	dʒ	r	n
Palatal					j				
Velar		k	G	x	ɣ				
Uvular		q							
pharyngeal				ħ	ʕ				
Glottal				h					

As mentioned earlier, the interdental phonemes /θ/, /ð/, and /ðˤ/ have changed to /t/, /d/ and /dˤ/. The word [θawra] “revolution” becomes [tawra], the word [laðið] “tasty” becomes [ldid], and the word [ðˤalam] “darkness” becomes [dˤlam]. As pointed out earlier, this is not the case for Tunisian Arabic whose consonant inventory includes the interdentals /θ/, /ð/, and /ðˤ/.

For an English learner from a Moroccan or Algerian background, one would expect some pronunciation difficulties with the English interdentals namely /θ/ and /ð/. The word [θri] “three” is usually pronounced [tri], and the word [ðæt] “that” is pronounced [dæt].

The other American English consonants that Arabic in general and North African dialects do not have (with a great degree of variation) are: /p/, /v/, /ŋ/, /ɾ/, and /ɹ/. Monolingual Arabic speakers who have not learned and been exposed to French usually have difficulties with [p] and [v] and might pronounce words like [vɪsɪt] "visit" as [fisit] and words like [pepə˞] as [baybr]. English words ending with the sound [ŋ] would be pronounced with a plain [n]. Speakers would substitute [t] for the voiced alveolar flap /ɾ/ and the voiced alveolar trill /r/ for the voiced alveolar approximant /ɹ/ saying words like [waɾɹ] "water" as [watr].

There is some uncertainty and disagreement when it comes to the right vowel inventory of each of these North African dialects. Everyone agrees that there are at least three short and long vowels: /a/-/aː/, /i/-/iː/, and /u/-/uː/ (Caubet 2008, Gibson 2008, Boucherit 2008). The disagreement is in what additional vowels these dialects exhibit. No matter how many vowels these dialects have, they do not come anywhere close to the large American English vowels inventory of twelve vowels (excluding diphthongs). Arabic speakers generally encounter difficulties with the American English vowels.

Syllable structure. The syllable structure in the North African dialects (specifically MA, AA, and TA) is characterized by allowing a consonant cluster in both the onset and the coda. Besides open syllables: CV as in *aː.na* 'I' and CCV as in *mʃa* 'he left', we also find closed syllables CVC as in *səb* 'insulted/cursed', CCVC as in *ktəb* "wrote", and CVCC as in *ʃərħ* 'explanation'. A closed syllable with a CCC cluster is also found but with the affixation of the second part of the discontinuous negation *ma-ʃ* 'neg-neg' as in *ma-ʃəftʃ* .

Difficulties that Arabic speakers will encounter when learning English syllable

structure will be mainly with consonant clusters like *rl* as in “world” and “girl” and *spr* as “spring”.

Morphology. Compared to English these Arabic dialects have rich morphology. The verb inflects for person, number and gender and it is the position of these agreement affixes that marks the two aspectual forms: perfective and imperfective. Nouns do not inflect for case but are marked for definiteness, number and gender.

Verb tense and agreement. The verb in these dialects, akin to MSA and the other Arabic dialects, has two aspectual forms, the so-called perfective which denotes past tense and imperfective which denotes present tense. The perfective form is marked by suffixation of agreement morphology e.g. *mʃa-**t*** ‘she left’ and *mʃi-**na*** ‘we left’, and the imperfective is marked by prefixation or circumfixation of agreement morphology e.g. ***t**-mʃi* ‘she leaves’ and ***t**-mʃi*-**w** ‘you(Plural) leave’. The verb in the imperfective form is preceded by the morpheme *ka* or *ta* to denote either habitual or continuous present tense e.g. ***ka**-t-xdəm* ‘she works/ is working’. The past progressive is formed by combining the copula *kan* ‘be’ in the perfective form with the main verb in the imperfective form:

(1) *kan-**t*** ***ka**-t-xdəm* “she
be.PERF-3sf Ka-3sf-wrok.IMP
“she was working/ used to work”

Verb passives, imperatives, and causatives. Passives, imperatives, and causatives are marked morphologically by an alternation in the verb form. The passive is formed by adding the prefix *t-* to the perfective and the imperfective verb stem, compare for example: *drəb ‘he hit’* with ***t**-drəb ‘he was hit’,* and *ka-y-drəb “he hits/is hitting”* with *ka-y-**t**-drəb* “he is being hit/gets hit”. There are three imperative verb forms, the first for second person masculine, the second for the second person feminine, and the third for

second person plural:

(2) *a.* *ʃrəb* "drink! (you singular masculine)"
b. *ʃərbi* "drink! (you singular feminine)"
c. *ʃərbu* "drink! (you plural)"

Geminating the second consonant of the tri-consonantal root is the strategy used to form causatives:

(3) *ʃrəb-t* → *ʃə**rr**əb-t-u*
drank.PERF-1s made.drank.PERF-1s-him
"I drank" "I made him drink"

Noun morphology. Unlike MSA the noun is not morphologically marked for case but it gets marked for definiteness, gender, and number. Indefinite nouns are not morphologically marked at least overtly e.g. *mudir* "director". Adding the definite article *al-* renders the noun definite *al-mudir*. These nouns also inflect for feminine by adding the feminine marker ***-a*** as in *mudir-**a*** 'directress'.

Plural nouns can be divided into regular plurals and broken plurals, the same system found in MSA. For regular plurals, there is a difference between MSA and the North African dialects in the way masculine regular plurals are formed. In MSA the affix *–u:n* is used for nominative plurals e.g. *mudi:r-u:n* 'directors', and the affix *–i:n* is used for accusative and genitive plurals e.g. *mudi:r-i:n*. Since case is not marked morphologically in these dialects, only one of these affixes was retained to mark masculine plural nouns and this affix is *–i:n* as in *mudi:ri:n*. To form feminine plural, the feminine plural marker ***–at*** is added similar to MSA *mudi:r-at* "directresses".
Broken plural nouns are formed by altering the internal vowels of the singular form e.g. *kursi* 'chair' becomes *krasa* 'chairs'

Syntax..

Word Order: declarative and interrogative clauses. MA, AA, and TA have two possible word orders; SVO and VSO with SVO being the unmarked order:

(4) Fatima *ʃərb-at* *lma*
Fatima drink.PERF-1s water
'Fatima drank water'

(5) *ʃərb-at* Fatima *lma*
drank.PERF-1s Fatima water
"Fatima drank water"

VSO is the dominant order in embedded clauses.

Forming Yes-No interrogative clauses involves the use of the Q(uestion) marker *wash* or simply a verb initial clause with the right intonation:

(6) wash *ʃərb-at* Fatima *lma* ?
Q drink.PERF-1s Fatima water
"Did Fatima drank water?"

(7) *ʃərb-at* Fatima *lma* ?
drink.PERF-1s Fatima water
'Did Fatima drank water?'

As for regular interrogative clauses, question words/interrogatives are used and must occur at the beginning of the sentence:

(8) *ʃnu / ʃin* *ʃərb-at* Fatima ?
what /where drink.PERF-1s Fatima ?
'what/where did Fatima drink?'

Theses dialects allow for the subject to be dropped (so-called pro-drop phenomenon):

(9) *ʃərb-at* *lma* ?
drink.PERF-1s water
'She drank water?

Direct objects and indirect objects cannot be dropped. When pronouns are used as direct

and indirect objects, these pronouns are clitics in nature and must be attached to the verb.

(10) *ʃrat-ha-li-h*
bought.PERF-it.fem-to-her
'I bought it for her'

Negation. Negation in MA, AA, and TA is expressed by using the discontinuous negation markers *ma-ʃ* . *ma-* always precedes the verb and *-ʃ* follows it:

(11) ma-*ʃərb-at-ʃ*
ne-drink.PERF-1s-neg
'She didn't drink'

Unlike MSA, negation in these dialects does not carry tense. The same negation markers can also used to negate other predicates like predicate nominal, adjectives, and preposition phrases.

Implications for clinical practice. Early Arabic learners of English may exhibit the following articulation and morphosyntactic differences due to transfer effects from Arabic to English. SLPs are encouraged to be cognizant of these differences in order to differentiate between a language disorder versus language difference.

- Phonology
    - Possible substitutions of the English interdentals (i.e. t/θ; d/ð) by speakers of Moroccan Arabic (MA) and Algerian Arabic (AA), but not Tunisian Arabic (TA).
    - Possible substitutions of the following English phonemes that are absent in North African dialects: f/v, b/p, n/ŋ, t/ɾ, and r/ɹ.

- Possible difficulty producing English vowels due to the relatively restricted Arabic vowel inventory of MA, AA and TA in comparison to English vowels.
- Expected difficulties in producing consonant clusters like *rl* as in "world", "girl" and *spr* as "spring"..

- Morphosyntactic
  - The North African dialects, imperfective forms denotes present tense and is marked by the prefix *ka* or *ta* to denote either habitual or continuous present tense. Hence, a potential difference that may be observed is the over use of present progressive tense (such as producing she is working for she works in English).
  - North African dialects use a morphological marker of passive. Possible deletions of the by phrase in producing English possessive structures might be observed.
  - There are several possible word orders in MA, AA, and TA; SVO, VSO, and SVO. Potential word order errors in English productions may be predicted as a result of Arabic word structure interference in the early stages of English learning, particularly inappropriate/over use of VSO order in English productions.
  - Subject dropping is possible in MA, AA, and TA and might be observed in English productions of native speakers from North Africa.
  - Several inflectional free morphemes in English are bound morphemes in GA. As a result some early learners of English may delete free

morphemes. For example when asked the question “Whose bear is this?” an early learner of English may answer “the boy” instead of “his”.

- The possessive marker is absent in MA, AA, and TA and deletion of possessive markers might be observed in early English learners from North Africa.

Levantine Arabic. Levantine Arabic refers to a family of Arabic varieties spoken in the Levant area consisting of the countries of Israel/Palestine, Jordan, Lebanon and Syria. Many dialects spoken in this area share a number of features that distinguish them from the Egyptian, Maghrebi (North-African), and Gulf dialects of Arabic. There are significant differences between the Arabic varieties spoken in the Levant/Near East with some of them sharing features with varieties in neighboring countries such as Iraq and Saudi Arabia. There are also differences between the so-called Urban, Rural, and Bedouin varieties, particularly in their phonemic inventories, sound patterns, and inflectional paradigms, in addition to syntactic and lexical differences. The following is a brief overview of the main phonetic, phonological, morphological, and syntactic aspects of Levantine Arabic. For each section, the distinctive properties of the Levantine varieties will be highlighted together with the features that differentiate them from English. The sketch, including the examples, is based on a number of sources listed at the end.

Phonetics and Phonology.

Phonemic Inventory. Like all modern spoken Arabic varieties in the geographical area that stretches from Morocco to Oman, Levantine Arabic shares a great deal of sounds with Modern Standard Arabic, the formal variety used throughout the Arabic as official language though it is learnt mostly through formal education.

		Bilabial	Interdental	Alveolar		Palatal/Alveo-Palat	Velar	Uvular	Pharyn-geal	Glottal
				Plain	Emphatic					
Plosive	**voiceless**	(p)		T	tˌ		k	[q]		ʔ
	voiced	b		D	dˌ		[g]			
Fricative	**voiceless**	f	[θ]	S	sˌ	ʃ/ʧ	x		ħ	h
	voiced	(v)	[ð]	Z		ʒ/ʤ	ɣ		ʕ	
Nasal		m		N						
Lateral				L						
Trill				r						
Approx.		w				j				

Levantine varieties display the pharyngeal and guttural consonants typical of all the Arabic varieties. It has the voiced and voiceless velar fricatives /ɣ/ and /x/ which are not found in English as part of its phonemic inventory.

(1) a. xamse (five)
b. ɣaali (expensive)

Like other Arabic dialects, and unlike English, they do not have the voiceless bilabial stop /p/ and the voiced labiodental fricative /v/ as part of their phonemic inventory. However, those sounds do arise in phonological contexts that trigger voicing or devoicing. In addition, unlike Modern Standard Arabic and a few modern spoken dialects, some Levantine varieties lack the interdental fricatives /ð/ and /θ/ but others do have them, though in contexts that do not necessarily overlap their Modern Standard Arabic counterparts. In Levantine varieties, in Syrian for example, the /ð/ and /θ/ that we find in Modern Standard Arabic have either /t/ and /d/ or /s/ and /z/ as counterparts, though some of them have preserved these sounds. The variation depends on the region and may also have sociolinguistic dimensions that have to do with class, education, and possibly gender. Another feature of Levantine Arabic is the diversity of how the Modern Standard Arabic voiceless uvula stop phoneme /q/ is realized. It can be realized as the

glottal /ʔ/ stop (like in Egypt and parts of Morocco) or the voiced velar stop /g/ and /k/. Compared to /ʔ/ and /g/, /k/ does not seem to be as widespread. Some varieties also display the alveopalatal affricates /ʧ/ and /ʤ/ as counterparts of the palatal fricatives /ʃ/ and /ž/ and yet others also display a pattern that is predominate mostly in the Gulf region, namely the realization of the Modern Standard Arabic /k/ as /ʃ/ or /ʧ/.

Levantine varieties also have the so-called pharyngealized or emphatic consonants as part of their phonemic inventory. Emphasis is contrastive.

(2) a. tiin (figs)
b. ṭiin (mud)

Gemination is distinctive in Levantine varieties, as it is in other Arabic varieties.

(3) a. mara (woman)
b. marra (a time/one time)

Like many other Arabic dialects, Levantine varieties have three short vowels /i/, u/ and /a/ and three long vowels /i:/ and /u:/ and /a:/. Thus, vowel length is distinctive.

(4) a. katab (wrote)
b. kaatab (correspond)

Vowels in the Levantine varieties, on a par with their counterparts in other Arabic varieties, get lowered or backed in the context of pharyngeal and uvular consonants. In some contexts and dialects, the entire stem may get pharyngealized.

(5) a. ħasadna (he envied us)
b. ḫạṣạḍṇạ (we reaped)

Full vowels such as the high vowel /i/ may get reduced in some contexts and varieties. For example, in some dialects the word for forget is realized as *nəsi* and is realized as *nisi*

in others. Levantine varieties are also well known for the so-called Imala whereby a low vowel /a/ is raised and realized as /e/.

(6) a. ʔakal (he ate)
b. ʔakel (he ate)

Syllable Structure and Syllabification. Like many other Arabic dialects, The Levantine varieties have the following syllables

CV (**ka**tab, he wrote)
CVV (**kaa**tab, he corresponded)
CVC (ka**tab,** he wrote)
CVCC (ka**tabt,** I wrote)
CVVC (suuʔ, market)

The syllables CVCC and CVVC, so-called superheavy syllables, are usually found at the end of words.

Unlike Maghrebi dialects, particularly Moroccan Arabic, Levantine varieties usually do not have consonant clusters in the word initial positions but there are cases where such clusters do arise.

(7) a. ždaad (new.pl)
b. ʃtrayt (I bought)

To avoid clusters that may arise in the context of affixation and cliticization, a vowel may get inserted.

(8) a. ktaab (book)
b. l-ə́ktaab (the book)

All words must carry stress in Levantine varieties. Stress assignment is sensitive to syllable weight and the number of syllables within the word from the right edge of the

word. A heavy syllable from the right edge is stressed (ignoring the last consonant of the last syllable).

(9) a. ba'rrad (he cooled)
b. kaatab (he corresponded)
c. ʔaka'lt (I ate)
d. ma'drase (school)

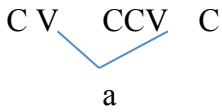
If the word contains only light syllables (two or three), the initial syllable is stressed.

(10) ʔa'kalit (she ate)

Levantine varieties are also well known for deleting high vowels in unstressed syllables. For example, the stressed initial high vowel in *fi'him* gets elided in some varieties when it is augmented with an affix that shifts the stress *fhi'mna*. The vowel elision and insertion rules are quite complex and dialects do display variation in how they apply them but stress and the affix and clitic types are relevant factors.

Morphology. The morphological and word formation patterns in the Levantine varieties of Arabic display the typical system we find in other Arabic varieties including Modern Standard Arabic. It has both concatenative and non-concatenative forms of derivations. The former uses affixation process that append prefixes or suffixes to a stem while the latter consist of processes that map a consonantal root onto a template with a specific vocalic melody. For example, the causative form of the verb *katab* is *kattab* which seems to involve a derivation as in (11) where the second consonant of the root *t* is geminated.

(11)



On the other hand, the derivation of *katab-u* (they wrote) involves the attachment/suffixation of the suffix *u* to the verb stem *katab*.

Levantine Arabic nouns and adjectives inflect for gender and number. The masculine singular is the unmarked form and the feminine involves the affixation of a low /a/ or mid vowel /e/ followed by a /t/ that gets dropped in pausal contexts.

(12) a. faaḍi (empty/free)
b. faadye (empty.fem/free.fem)

Numbers on adjectives can be realized concatenatively (by affixation) or non-concatenatively, through root-to-template mapping.

(13) a. nḍiif (clean)
b. nḍaaf (clean.pl)
c. faḍyeen (empty.pl/free.pl)

Likewise, nouns are marked for number and gender. Unlike adjectives, they can be marked for dual number as well. The dual is marker by the suffix –en which attaches to the singular noun.

(14) a. kaff (glove)
b. kaffen (two gloves)
c. kfuuf (glove.pl)

Plural formation is more complex. A noun depending on its morphological make-up may be derived by regular suffixation or by the modification of the vowels (somewhat similar to the English vowel ablaut pattern in *foot* <-> *feet*). This type of internal derivation is

called the broken plural pattern as opposed to the sound plural pattern that involves suffixation. It is widespread among Arabic varieties and is one of the most distinguishing features of Arabic as a Semitic language. It is also quite complex and includes a large number of patterns and templates that vary in their vocalic melodies and prosodic properties. The suffixation pattern involves the suffix *iin* for masculine nouns and the suffix aat for feminine nouns. *Iin* is restricted to human nouns while *aat* applies more generally including non-human nouns that are masculine in the singular.

(15)	a.	mʃallem	(teacher.m)
	b.	mʃallm-iin	(teachers.m)
(16)	a.	mnabbeh	(alarm clock)
	b.	mnabbhaat	(alarm clocks.fp)
(17)	a.	kiis	(bag)
	b.	kyaas	(bags)

Nouns inflect for definiteness in Levantine Arabic. The definite article is (ʔ)il or l depending on whether the word is following another word. It assimilates to the first consonant of the noun if it starts with an alveolar or palatal consonant

(18)	a.	ʔustaaz	(professor)
	b.	ʔil- ʔustaaz	(the professor)
(19)	a.	dərs	(lesson)
	b.	d-dərs	(the lesson)

Levantine Arabic verbs occur in two main forms, the perfective and the imperfective. The perfective consists of the verb stem and suffixes that display agreement in with the subject in person, number and gender. The imperfective has both prefixes and suffixes that display agreement with the subject also in person, number, and gender. The tables

below illustrate the two paradigms. Dialects vary with respect to the vowels of the perfective verbs (as full vowels or reduced to schwas) and the vowel of the imperfective prefix. Verbs also vary according to their vocalic melodies (for example, some have the melody *a—a* and some have the melody *i—i*). There is also extensive variation in the size of the paradigms with some varieties distinguishing between plural feminine and plural masculine forms.

katab-write	Singular	Plural
1 person	katab-t	katab-na
2 person masculine	katab-t	katab-tu
2 person feminine	katab-ti	katab-tu
3 person masculine	Katab	katab-u
3 person feminine	katab-et	katab-u

katab-write	Singular	Plural
1 person	ʔə-ktob	nə-ktob
2 person masculine	tə-ktob	tə-kətb-u
2 person feminine	tə-kətb-i	tə-kətb-u
3 person masculine	yə-ktob	yə-kətb-u
3 person feminine	tə-ktob	yə-kətb-u

In Levantine varieties, and unlike English, the verb inflects even in non-finite contexts. For example, in an embedded clause that is non-finite or after a modal, the verb will still show agreement. There are no bare forms of the verb in Arabic that occur in any syntactic context. In imperatives, the prefix of the imperfective verb is dropped but the suffix still surfaces.

(20) mumkin y-saafir
possible 3m-travel
'He might travel'

The Levantine varieties attach the proclitics bə, ʕam, a raħ and their variants in different

dialects to the imperfective verb to indicate present (habitual and progressive) and future tenses.

(21) a. ba-šrab (I drink)
b. ʕam ʔaʃrab (I am drinking)
c. raħ ʔaʃrab (I will drink)

To derive complex forms of the verb such as the passive, inchoative or causative, Levantine varieties, use prefixes, such as **t** and **n** for the passive and inchoative but stem modification for the causative and reciprocal which involve the germination/doubling of the second consonant of the root or the lengthening of the first vowel of the stem (libis <-> labbas; wear/make wear or dress; katab <-> kaatab; write/correspond) katabunderstand/make understand).

Syntax

Sentential Syntax. Like other Arabic dialects, Levantine varieties display both the VSO order and the SVO order, with all the other six logical possibilities available under the appropriate pragmatic and syntactic conditions. If the object is preposed, an object clitic must be attached to the verb. It is debatable whether the VSO order is basic or whether the SVO order has become more dominant. The subject can be dropped and its content retrieved from the agreement morphology on the verb.

(22) a. gaabal ʔeħmad muna VSO
met.3ms Ahmed Mona
'Ahmed met Mona'
b. gaabal muna ʔeħmad VOS
met.3ms Mona Ahmed

c. ʔeħmad gaabal muna SVO
Ahmed met.3ms Mona

There are independent subject pronouns but in the context of verbs, their function is

usually to focus the subject. Object pronouns are clitics on the verb. The following tables contain the paradigms of the subject pronouns and object clitics. As mentioned above there is extensive variation in the number of cell in the paradigms and the phonological realization of the pronouns and clitics.

Independent Pronouns

	Singular	Plural
1 person	ʔana	nəħna
2 person masculine	ʔəntə	ʔəntu
2 person feminine	ʔənti	ʔəntu
3 person masculine	huwwe	hənne
3 person feminine	hiyya	hənne

Object Clitics

	Singular	Plural
1 person	-ni	-na
2 person masculine	-ak	-kon
2 person feminine	-ek	-kon
3 person masculine	-o	-hum
3 person feminine	-ha	-hon

Unlike English, Levantine Arabic varieties do not allow double objects (as in English sentence" He gave Mary the book) but only a direct object and an indirect object headed by a dative preposition.

The typical interrogative pattern in Levantine Arabic, in contrast with Egyptian Arabic, involves fronting the question phrase, through the in-situ option (leaving the question phrase in its base position is also possible in some varieties).

(23) a. ʃuu gaal ʔeħmad
what said.3ms Ahmed
'What did Ahmed say'

b. ʔinta šuf-t miin ʔimbaarih

you.MSG saw-2M who yesterday
'Who did you see yesterday?'

Relative clauses require the presence of the relative pronoun ʔilli and if the relativized nominal is an object, an object clitic (resumptive pronoun) is required.

(24) **l-bint** ʔilli ʃuf-ti-**ha**
the-girl that saw-2F-her
'The girl that you saw'

However, unlike English if the relativized noun is indefinite, no relative pronoun is used.

(25) ʕəndi saḍiiʔ ždiid ʕa-l-balad
at.me friend new to-the-country
'I have a friend who is new to the country'

Another property that distinguishes Levantine Arabic from English is the lack of a particle such as "to" to demarcate embedded non-finite clauses.

(26) bəddi ʔasaafir
want.1s travel
'I want to travel'

There is a great deal of variation in negative constructions in Levantine Arabic. Most dialects realize sentential negation either by the proclitic maa or the proclitic *maa* combined with the enclitic *š* as in Moroccan, Egyptian and some Yemeni dialects. Other Levantine varieties may drop maa in some contexts and use š only.

(27) l-walad ma-ʔara-(ʃ) l-kteeb
the-boy neg-read.past.3ms-(neg) the-book
'The boy didn't read the book.'

If the predicate is not a verb, the two negatives (the proclitic *maa* and the enclitic *ʃ*) combine to form a single and morphologically independent negative.

(28) huwwe miʃ hon

he neg here

'He is not here.'

Levantine varieties of Arabic, like other Arabic dialects, do not usually have a copula verb in present tense sentences. In these contexts, only the subject and the predicate (which does not have to be a verb) may occur.

(28) a. huwwe b-l-beet
he in-the-house
'He is in the house.
b. ʔel-walad mižtahid
the-boy hardworking
'The boy is hardworking'

Phrasal syntax: noun phrase. The demonstratives typically precede the noun and when they are not phonologically reduced agree with it in gender and number.

(29) hadiik əl-mara

that the-woman
'That woman'

Attributive adjectives follow the nouns they modify and agree with them in definiteness as well.

(30) a. ʔil-maṭʕam ʔil-maʃhuur
the-restaurant the-famous
'The famous restaurant'

b. maṭʕam maʃhuur
restaurant famous
'A famous restaurant'

There is also no verbal equivalent to the possessive verb "have" in English. Levantine

varieties express possession by using the particle *ʕand* (at).

(31) ʕand-iiktaab
with-me book
'I have a book'

In this construction, and unlike in English, the possessee is the subject and the possessor is the complement of the possessive preposition.

On a par with other Arabic dialects, Levantine varieties have two main constructions to express genitive relations. The first is an annexation construction where the possessor and the possessee are adjacent and seem to form a single prosodic unit (so-called Construct State). The second construction uses a possessive particle that separates the possessor and the possessee.

(32) a. ʃruuʃ ha-ʃ-ʃažara
roots that-the-tree
'The roots of that tree'

(33) b. ʃ-ʃruuʃ bataʕ ha-ʃ-ʃažara
the-roots of that-the-tree
'The roots of that tree'

Implications for clinical practice. Early Levantine Arabic learners of English may exhibit the following articulation and morphosyntactic differences due to transfer effects from Arabic to English. SLPs are encouraged to be cognizant of these differences in order to differentiate between a language disorder versus language difference.

- **Phonology**
    - Since Levantine Arabic (LA) dialects do not have the voiceless bilabial stop /p/ and the voiced labiodental fricative /v/ as part of their phonemic

inventory, substitutions of b/p and b,f/v may be apparent in English productions of LA speakers

- Possible substitutions of the English interdentals (e.g. t/θ; d/ð) /by some speakers of Levantine Arabic (LA) lacking the interdental fricatives.
- Since some LA varieties display the alveopalatal affricates /ʧ/ and /ʤ/ as counterparts of the palatal fricatives /ʃ/ and /ž/, Deaffrication may appear to persist in the English productions of LA speakers (i.e. /ʃiz/ for cheese and / žΛ ž/ for judge). Similarly, since Levantine varieties usually do not have consonant clusters in the word initial positions, cluster reduction may be observed in word initial positions (such as dove/drove, bow/blow, or bother/brother)
- Since germination is a distinctive feature of LA, it may be falsely recognized as instances of cluster reduction (/Kodd/ for cold, compared to /Kod/ for cold). Since, vowel insertion is frequent in Arabic in the context of affixation and cliticization in Arabic, epenthesis may be apparent in English productions as well.
- Possible difficulty producing English vowels due to the relatively restricted Arabic vowel inventory.
- Since vowel length is a distinctive feature in LA, similar to its counterparts in other Arabic varieties, possible duration differences in the pronunciation of English vowels might be observed.
- Since heavy syllables from the right edge are usually stressed in LA, ignoring the last consonant of the last syllable, Levantine Arabic learners

of English, like other Arabic dialects learners, may mispronounce words with stress in initial syllables and lengthen the vowels instead of adding the stress. For instance, they might pronounce CONsequences instead of ConsequenCES (the capitalized syllable being stressed).

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Morphosyntactic

- Since Levantine Arabic, like other dialects, includes concatenative and non-concatenative forms of derivations, Levantine Arabic native speakers might produce inappropriate concatinative English productions.
- Since in Levantine varieties, the prefix / bə/ attach to the imperfective verb to indicate present (habitual and progressive), Levantine Arabic speakers may drop English free morphemes signifying present progressive (e.g., boys eating/ boys are eating).
- To derive passive, inchoative, and causative structures, Levantine varieties use prefixes, such as **t** and **n** for the passive and inchoative but stem modification for the causative and reciprocal which involve the germination/doubling of the second consonant of the root or the lengthening of the first vowel of the stem. Hence, Levantine Arabic speakers learning English may delete the by phrase in their English passive productions.

- Like other Arabic varieties, Levantine Arabic displays both the VSO order and the SVO order, with all the other six logical possibilities available under the appropriate pragmatic and syntactic conditions. Hence, potential word order errors in English productions may be predicted as a result of differences in the variability of the possible Arabic word orders in comparison to English.
- Object pronouns in Levantine Arabic, like other dialects, are clitics on the verb. Hence, speakers of Levantine Arabic learning English may have difficulty perceiving and producing object pronouns in English (such as the tendency to substitute we for us in producing “these toys belong to we” instead of us).
- Unlike English, Levantine Arabic varieties do not allow double objects (as in English sentence” He gave Mary the book) but only a direct object and an indirect object headed by a dative preposition. Hence, addition of prepositions might be observed in producing and recalling double objects (such as, Hussein gave the book to Mary/Hussain gave to Mary the book when asked to recall the sentence Hussain gave Mary the book)
- Deletion of the relative pronoun in indefinite relative structures may be observed since unlike English if the relativized noun is indefinite, no relative pronoun is used (e.g., LA speaker might delete the relative pronoun who when asked to recall the sentence, “The boy bought a book for a friend who likes short stories” and recall it as “The boy bought a book for a friend because he likes short stories”).

- Possible difficulty producing English particles that are absent in Arabic, such as " I want travel" instead of " I want to travel".
- Unlike English, Levantine Arabic adjectives follow the noun they modify and agree with them in definiteness as well. A child may use the LA pattern in English (e.g.. "dog big" for "big dog). Similarly, in construct structures, and unlike in English, the possessee is the subject and the possessor is the complement of the possessive preposition. Hence, Levantine speakers learning English may use the LA pattern in English (e.g.. roots tree instead of tree roots).
- Possible productions of interrogative with a question phrase in its original position may be observed due to interference of LA structure (such as producing "you are eating what" instead of " what are you eating?").
- Native LA speakers learning Arabic, like other Arabic dialects, may tend to delete the possessive marker (e.g.. cat food instead of cat's food)

Egyptian Arabic. Egyptian Colloquial Arabic is spoken in Egypt and shares many properties with the Arabic dialects in the neighboring countries of Libya and Sudan. There are also dialectal differences within Egypt. The dialect that has been extensively described and discussed is Cairene dialect spoken in the city of Cairo. Other dialects that have received some attention are the dialect of Alexandria and the dialect of Upper Egypt. The following is an overview of the main phonetic, phonological, morphological, and syntactic aspects of Egyptian Arabic. For each section, the distinctive

properties of the Egyptian dialect will be highlighted together with the features that differentiate Egyptian Arabic from English.

Phonetics and phonology.

Phonemic inventory. The phonemic inventory of Egyptian Arabic overlaps with that of its counterpart in other Arabic varieties, including Modern Standard Arabic. It has the pharyngeal and guttural consonants typical of all the Arabic varieties spoken in the Arabic speaking world. It has the voiced and voiceless velar fricatives /ɣ/ and /x/ which are not found in English as part of its phonemic inventory. Like other Arabic dialects and unlike English it lacks the voiceless bilabial stop /p/ and the voiced labiodental fricative /v/. Unlike Modern Standard Arabic and a few modern spoken dialects, it lacks the interdental fricatives /ð/ and /θ/. While in many dialects, these Standard (and English) consonants have been replaced by /t/ and /d/ respectively, in Egyptian Arabic, they have been replaced by /s/ and /z/. Another feature of Egyptian Arabic, is the absence of the voiceless uvular stop /q/ and its replacement with the glottal stop. However, in some contexts, such as recitations from Quran, Egyptian speakers use /q/. Unlike some Arabic dialects, particularly the Gulf dialects, Egyptian Arabic lacks affricates. Egyptian also lacks the voiced fricative /ž/ and uses /g/ instead.

Egyptian Consonants

		Bilabial	Inter-dental	Alveolar		Palatal	Velar	Uvular	Pharyn-geal	Glottal
				plain	emphatic					
Plosive	voiceless			t	ṭ		k	(q)		ʔ
	voiced	b		d	ḍ		g			
Fricative	voiceless	f		s	ṣ	ʃ	x		ħ	h
	voiced			z	ẓ		ɣ		ʕ	
Nasal		m		n						
Lateral				l						
Trill				r						
Approximant		w				j				

Like many other Arabic dialects, Egyptian has three short vowels /i/, u/ and /a/ and three long vowels /i:/ and /u:/ and /a:/. Thus, vowel length is distinctive. It is a matter of debate whether mid long vowels /e:/ and /o:/ are distinctive. Vowels in Egyptian Arabic, like their counterparts in other Arabic varieties, get lowered or backed in the context pharyngeal and uvular consonants.

Syllable structure and syllabification. Like many other Arabic dialects, Egyptian Arabic has the three basic syllables CV, CVV and CVC. Thus, the word *kaatab* (writer) consists of two syllables, *kaa* (CVV) and *tab* (CVC). The word *katab* consists of two syllables *ka* (CV) and *tab* (CVC). On a par with other Arabic dialects, Egyptian Arabic displays the so-called superheavy syllables which usually have a complex nucleus plus coda (CVVC) or complex coda (CVCC) and are restricted to the final position of the word. This is, for example, the case in a word such as katabt (I wrote) whose second syllable is superheavy (CVCC) and in the word *ʃufnaak* (we saw you) whose second

syllable is also superheavy (CVVC).

However, Egyptian Arabic, like some other dialects, does not allow consonant clusters in the initial position or word medially. If this situation arises due to morphology or borrowings from English, Egyptian resorts to syllable repair strategies that include epenthesis of /u/ or /i/ depending on the context. Borrowings from English such as the words *sprite* or *princess* trigger vowel epenthesis to bear the cluster.

Long vowels are shortened in some contexts. For example, a long vowel that is part of a superheavy syllable is shortened if it finds itself in a medial position due to affixation or cliticization.

(1) ʔiid (hand) ʔid-ha (her hand)
(2) /ʔult+lak/ ʔult[i]lak (I told you)

The stress rules for Egyptian Arabic are relatively complex but roughly work as follows. Stress lands on a final superheavy syllable (CVVC/CVCC). If there is no final superheavy syllable, stress a penult heavy syllable (CVC/CVV). Barring those two contexts, stress falls on the penultimate or antepenultimate syllable depending on the nature of the neighboring syllables.

(3) a. ka'tabt (stress on superheavy syllable)
b. 'bintik (stress on penultimate heavy syllable)
c. mudar'risa (stress on prenultimate syllable)
d. 'darasit (stress on Anpesultimate syllable)

Morphology. The nominal and verbal morphology displays the typical pattern we find in other Arabic varieties including Modern Standard Arabic. It has concatenative and non-concatenative derivations. The former deploys affixation while the latter relies more critically on modifying the consonantal root.

Egyptian Arabic nouns and adjectives inflect for gender and number. The gender

distinctions are feminine and masculine and the number distinctions are singular and plural with limited distribution for the dual. There is no morphological marker for the masculine. The feminine is marked by the suffix /at/ but the /t/ may drop in pausal contexts. The dual is marked by the suffix –en which attaches to the singular noun. Plural formation is more complex. A noun depending on its morphological make-up may be derived by regular suffixation or by the modification of the vowels (somewhat akin to the English pattern in *foot* <-> *feet*). The latter pattern is called the broken plural pattern as opposed to the sound plural pattern that involves suffixation. The dominant suffixation pattern involves the suffix i:n for masculine nouns and the suffix aat for feminine nouns. Some illustrative examples are given below:

(4)

Sound Masculine	Sound Feminine	Broken
mudarris-iin (teachers)	mudarris-aat (teachers)	madaaris School
muhandis-iin Engineers	muhandis-aat Engineers	kilaab dogs

Nouns inflect for definiteness in Egyptian Arabic. The definite article is ʔ*il* but it assimilates to the first consonant of the noun if it starts with an alveolar, palatal or velar consonant.

(5)

fulus	ʔil-fulusS	but	raagil	ʔir-ragil
money	the-money		man	the-man

Egyptian Arabic verbs occur in two main patterns, the perfective and the imperfective. The perfective consists of the verb stem and suffixes that carry information about the person, number and gender of the subject. The imperfective is more complex in that it has both prefixes and suffixes that carry agreement information with the subject.

The two paradigms are illustrated below:

katab-write	Singular	Plural
1 person	katab-t	katab-na
2 person masculine	Katab-t	Katab-tu
2 person feminine	Katab-ti	Katab-tu
3 person masculine	Katab	katab-u
3 person feminine	Katab-it	Katab-u

katab-write	Singular	Plural
1 person	ʔa-ktib	ni-ktib
2 person masculine	Ti-ktib	ti-ktib-u
2 person feminine	ti-ktib-i	ti-ktib-u
3 person masculine	yi-ktib	yi-ktib-u
3 person feminine	ti-ktib	yi-ktib-u

In Egyptian Arabic, and unlike English, the verb inflects even in non-finite contexts. For example, in an embedded clause that is non-finite, the verb will still show agreement. There are no bare forms of the verb in Arabic that occur in any syntactic context. In imperatives, the prefix may drop but the suffix still surfaces. Egyptian Arabic has two prefixes/clitics that occur in the present tense and future. The /bi/ prefixes to the verb and designates an event that is on-going (progressive) or habitual. The /ha/ prefix marks the future. The verb that these prefixes attach to is always from the imperfective paradigm.

To derive complex forms of the verb such as the passive, inchoative or causative, Egyptian Arabic, uses prefixes, such as **ʔit** and **ʔin** for the passive and inchoative but stem modification for the causative which involves the germination/doubling of the second consonant of the root (fihim <-> fahhim; understand/make understand).

In Egyptian Arabic, and in other Arabic dialects, there is a comparative form of the (trilateral) adjective but there is no special superlative form. To convey the

superlative meaning that is encoded by *most* or the suffix *est* in English, Egyptian Arabic uses the comparative.

Syntax.

Sentential syntax. Like other Arabic varieties, Egyptian Arabic displays both the VSO order and the SVO order, with all the other six logical possibilities available under the appropriate pragmatic and syntactic conditions. However, the SVO order seems to be increasingly dominant in Egyptian Arabic.

(6) a. ʔil-mudiir saʔal ʕaleeh
the-director asked about-him
'The director asked about him'

b. saʔal ʔil-mudiir ʕaleeh
asked the-director about-him
'The director asked about him'

Egyptian Arabic is a null subject language that does not need an overt independent pronominal subject. The agreement on the verb is sufficient.

(7) katb-na
wrote-1p
'We wrote'

There are independent subject pronouns but in the context of verbs, their function is usually to focus the subject. Object pronouns in Egyptian are clitics on the verb. The following tables contain the paradigms of the subject pronouns and object clitics.

Independent Pronouns

	Singular	Plural
1 person	ʔana	ʔiɦna
2 person masculine	ʔinta	ʔintu
2 person feminine	ʔinti	ʔintu
3 person masculine	Huwwa	humma
3 person feminine	Hiyya	humma

Object Clitics

	Singular	Plural
1 person	-ni	-na
2 person masculine	-ak/k	-ku/kum
2 person feminine	-ik/ki	-
3 person masculine	-u(h)	-hum
3 person feminine	-ha	humma

Unlike English, Egyptian Arabic generally does not allow double objects (as in the English sentence "He gave Mary the book.") but only a direct object and an indirect object headed by a dative preposition.

The typical interrogative pattern in Egyptian Arabic allows the question phrase to remain in its original position. In this respect, it is different from both English and the majority of spoken Arabic dialects. This strategy is available to both arguments and adjuncts.

(8) a. huwwa ʔiʃtara ʔiih
He bought what
'What did he buy'

b. huwwa kaan ʕaayiz yruuħ fiin
he was want go where
'He wanted to go where?'

Egyptian Arabic relatives require the presence of the relative pronoun illi.

(9) ʔir-raagil ʔilli maat
the-man who died'
'The man who die…'

However, unlike English if the relativized noun is indefinite, no relative pronoun is used.

(10) ʃaaf wlaad gaabu kutub
saw children brought books
'He was some children who brought some book'

Another property that distinguishes Egyptian Arabic from English is the lack of a particle

such as “to” to demarcate embedded non-finite clauses. Thus, in Egyptian Arabic, a finite verb can be immediately followed by a dependent verb.

(11) huwwa kaan ʕaayiz ysaafir
he was want travel
‘He wanted to travel’

Negation in Egyptian Arabic is somewhat complex and its distribution mirrors to some extent the distribution of negation in Maghrebi dialect and some Levantine dialects. In sentences with finite verbs, sentential negation is realized by a proclitic maa and an enclitic š.

(12) ma-saʔal-ni-ʃ
neg-asked-me-neg
‘He didn’t ask me’

If the predicate is a noun, adjective or a combination of a preposition and a noun, sentential negation is realized as muʃ. The same pattern occurs if the verb carries the future prefix.

(13) a. huwwa muʃ muhandis
he neg engineer
‘He is not an engineer’

b. muʃ ha-ygi
neg fut-come
‘He will not come’

On a par with other Arabic varieties, Egyptian Arabic does not usually have a copula verb in present tense sentences. In these contexts, only the subject and the predicate (which does not have to be a verb) may occur.

(14) a. hiyya muhandisa
she engineer
‘She is an engineer’

b. hiyya hina
she here
'She is here'

c. hiyya gamiila
she beautiful
'She is beautiful'

d. Hiyya fi-l-beet
she in-the-house
'She is in the house'

Phrasal syntax: noun phrase. Unlike other Arabic dialects and English, in Egyptian Arabic, the demonstrative pronouns follow the noun and agree with it in gender and number.

(15) a. ʔil-kitaab da
The-book this
'This book'

b. ʔil-bint dii
the-girl this
'This girl'

c. ʔil-muhandisiin dul
the-engineers these
'These engineers'

Unlike English, Egyptian Arabic adjectives follow the noun they modify and agree with it in number and gender.

(16) ʔil-bint ʔil-gamiil-a
girl the-beautiful-fem,
'the beautiful girl'

There is also no verbal equivalent to the possessive verb "have" in English. Egyptian Arabic, like other Arabic dialects, expresses possession by using the particle ʕand (at).

(17) ʕand-ii ktaab

at-me book
'I have a book'

This particle behaves like a preposition and takes the possessor as its complement, which is radically different from English where the possessor is subject.

Numerals 1 and 2 are only used for emphasis and follow the noun (behaving like adjectives).

(18) a. walad waaħid
boy one
'One boy'

b. waladeen ʔitneen
boys.dual two
'Two boys'

Numerals from 3 to 10 precede the noun. However, they follow it if they are definite (the three books).

(19) a. talaat kutub
Three books
'Three books'

b. ʔil-kutub t-talaata
'The three books'

The noun takes the singular form. With numbers above ten, the noun is singular. Ordinals pattern with adjectives and follow the noun.

Implications for clinical practice. Early Arabic learners of English may exhibit the following articulation and morphosyntactic differences due to transfer effects from Arabic to English. SLPs are encouraged to be cognizant of these differences in order to differentiate between a language disorder versus language difference.

- **Phonology**

- Egyptian dialects lack the voiceless bilabial stop /p/, the voiced labiodental fricative /v/, interdental fricatives /ð/ and /θ/, voiced alveopalatal fricative/ž/ and affricates /tʃ/ and /dʒ/. Hence, substitutions of the following English phonemes may be observed : f/v, b/p, g/ ž, t or s /θ; d or z/ð, t/tʃ, g or d/dʒ.
- Since vowel length is a distinctive feature in Egyptian Arabic, similar to its counterparts in other Arabic varieties, possible duration differences in the pronunciation of English vowels might be observed.
- Since consonant clusters are not allowed in the initial and medial positions in Egyptian Arabic, like some other dialects, epenthesis of /u/ or /i/ might be observed in producing English consonant clusters in initial and medial positions (as in producing worild instead of world and /giril/ instead of girl.
- Since stress generally lands on a final superheavy syllable (CVVC/CVCC), Egyptian Arabic learners of English, like other Arabic dialects learners, may mispronounce words with stress in initial syllables and lengthen the vowels instead of adding the stress. For instance, they might pronounce invenTORY instead of INVENtory (the capitalized syllable being stressed).

- **Morphosyntactic**
  - Since in Egyptian Arabic verb inflects even in non-finite contexts, we might observe difficulties producing non-finite verb in embedded clause. For example, Arabic learners of English might produce “My friend forgot

to texting me," instead of "My friend forgot to text me," or saying "I failing the exam is something I don't like" instead of "Failing the exam is something I don't like."

- Egyptian Arabic, like other Arabic dialects, has a comparative form of the (trilateral) adjective but there is no special superlative form. Hence, Arabic learners of English might have difficulty producing the superlative English form such as producing more faster instead of fastest to convey the superlative).
- Passive and inchoative structures are derived morphologically using prefixes, such as **ʔit** and **ʔin** and tendency to delete the by phrase in learners' productions of English passive structures might be detected.
- The possessive marker is absent in EA and deletion of possessive marker might be observed in early English learners from North Africa.
- Like other Arabic varieties, Egyptian Arabic displays both the VSO order and the SVO order, with all the other six logical possibilities available under the appropriate pragmatic and syntactic conditions. However, the SVO order seems to be increasingly dominant in Egyptian Arabic. Hence, potential word order errors in English productions may be predicted as a result of differences in the variability of the possible Arabic word orders in comparison to English.
- Since Egyptian Arabic, like other Arabic dialects, is a null subject language that does not need an overt independent pronominal subject, subject dropping might be observed in English productions. For example

a child may tend to say " swinging", " sliding" instead of "they are swinging" and " they are jumping" when asked to describe a picture of children playing in a playground.

- Egyptian Arabic native speakers, like other dialects, may have difficulty perceiving and producing subject and object pronouns in English. For example a child may say "Cutting" instead of "He is cutting," or substitute we for us (i.e. These toys belong to we).
- Unlike English, Egyptian Arabic generally does not allow double objects (as in the English sentence "He gave Mary the book.") but only a direct object and an indirect object headed by a dative preposition. Hence, addition of prepositions might be observed in producing and recalling double objects (such as "He gave to Mary the book" for "He gave Mary the book).
- Possible productions of interrogative with a question phrase in its original position may be observed due to interference of EA structure (e.g. " You are eating what?" instead of " What are you eating?").
- Deletion of the relative pronoun in indefinite relative structures may be observed. (e.g., an EA speaker might delete the relative pronoun who when asked to recall the sentence, "He saw some boys who chased him home," and recall it as " He saw some boys chased him home."
- Native EA speakers learning English may have difficulty producing articles and copula. Hence a tendency to delete articles in embedded

clauses or copula in present tense sentences may be observed (such as producing “she dancer” instead of “she is a dancer”).

- Unlike English, Egyptian Arabic adjectives and numerals 1 and 2 follow the noun they modify. A child may use the EA pattern in English (e.g. “hat big” for “big hat” or “ boy one” instead of “one boy)
- Native EA speakers learning Arabic, like other Arabic dialects, may tend to delete the possessive marker (e.g. king hat instead of king’s hat).
- In EA, like other dialects, the noun takes the plural form with numbers below ten, but the singular form with numbers above ten. Hence, Arabic speakers learning English may tend to use the singular form of a noun preceded by numerals (e.g. thirty book instead of thirty books)