Tri-consonantal Clusters: the case of definite determiners in Qassimi Arabic

Our understanding of the definite determiner in Arabic comes mainly from Modern Standard Arabic (MSA), other varieties are understudied, and those other varieties reveal a richer, more complex set of behaviors than previously understood. This paper analyzes the definite determiner (DET) of one of these varieties: Qassimi Arabic (QA), spoken in Qassim in Saudi Arabia, and compares it partially to two other varieties. The DET in this dialect has **three morphological realizations: [a], [al], and [aG];** the 'G' in the latter is an underspecified consonant that copies the features of the following word-initial coronal consonant, creating a geminate. We argue that the OCP account of the DET assimilation given in previous literature about MSA partially holds in this dialect.

The first realization of this DET is [al] (1). It surfaces faithfully before [-coronal] and, interestingly, before [ts, dz, dʒ]; it is worth mentioning that [ts] and [dz] are underlyingly [k] and [q], consecutively. The constraint IDENT-LATERAL preserves the lateral feature of the DET in these forms. It is worth mentioning that VC syllables are attested in word-initial positions of the definite forms in this dialect (Alrashed, 2018); thus [al] is a licit syllable.

(1)	Indefinite	Definite	Gloss
a.	gałam	**al**-gałam	The pen
b.	ʕaʃa	**al**-ʕaʃa	The dinner
c.	tsabd	**al**-tsabd	The liver

The second form of the DET is one where the /l/ in the DET assimilates to the following coronal consonant (2). This assimilation is triggered by the constraint OCP-CORONAL that bans adjacent coronals (Leben, 1973). In these examples, the DET is the first half of a geminate created by the assimilation of the consonant of the DET to the following [+coronal]. In (3), the faithful candidate is ruled out by OCP-COR. Candidate (3c) satisfies this constraint but is ruled out by MAX-C. The winning output satisfies both by assimilation which violates the low-ranking IDENT-LAT; this constraint preserves the lateral feature in the determiner.

(2)	Indefinite	Definite	Gloss
a.	θuub	**aθ**-θuub	The dress
b.	rijaal	**ar**-rijaal	The Riyal
c.	simak	**as**-simak	The fish

(3)	/al-θuub /	OCP-COR	MAX-C	ID-LAT
	a. al.θuub	*!		
	☞**b. aθ.θuub**			*
	c. a.θuub		*!	

The third form of the DET is [a]. This form occurs before words of complex onsets (4).

(4)	Indefinite	Definite	Gloss
a.	**bg**ira	**a**-bgira	The cow
b.	**tr**aab	**a**-traab	The soil

The examples in (4) show that the DET behaves similarly before coronals and non-coronals in words starting with complex onsets. This, I argue, is governed by some constraints in the dialect which are ranked higher than OCP-COR that triggers assimilation of the DET before coronals in (2). In (3), we argue that the underlying form of the determiner in this dialect is not /l/ as previously stated but rather /al/, which makes it different from the MSA case and explains the existence of the third allomorph of the DET in (4). Only the vowel of the DET surfaces in these forms. We argue that the definite DET does not fully surface before these words because they start with onset clusters. So, forms like *[altraab] and [albgira] would create a sequence of three consonants, banned in this dialect. So, the constraint *CCC that bans this sequence is high-ranking in (QA) (Alnuqaydan, 2022).

(5)	/al-traab /	*GGC	CONTIGUITY	OCP-COR	*CCC	MAX-C	ID-LAT
	a. al.traab			**!	*		
	b. at.traab	*(!)		*	*		*
	☞**c. at.raab**			*		*	*
	d. a.lit.raab		*(!)	*!			

The faithful candidate (10a) violates Ocp-Coronal more than the winner (10c). It also violates *Ccc. By assimilating to the following coronal, candidate (10b) satisfies Ocp-Coronal once, so only incurs one OCP violation. However, this assimilation creates a non-intervocalic geminate, violating *Ggc, which bans non-intervocalic geminates (Pajak 2009). Candidate (10b) does not violate *Ccc because geminates share one root node, thus the sequence [ttr] only occupies two nodes. The winning output minimally violates Ocp-Coronal at the expense of Max-C. This output's [tr] sequence violates Ocp-Coronal, but root faithfulness outranks it, so [tr] must be retained. Root faithfulness also explains why it is a consonant in the determiner, not the root, that gets deleted. Candidate (10d) also minimally violates Ocp-Coronal by epenthesis, violating the high-ranking Contiguity.

The behavior of the definite determiner in Qassimi Arabic is different from other Arabic varieties in one aspect: before complex onsets. The definite determiner surfaces as the vowel [a] only before complex onsets. In this paper, I compare it to the determiner in Tunisian Arabic before complex onsets (6).

(6)	Indefinite	Definite	Gloss
a.	ʒbal	**iʒ**-ʒbal	The mountain
b.	ðhab	**ið**-ðhab	The gold
c.	bħar	**li**-bħar	The sea
d.	ktubba	**li**-ktubba	The books

As we see in (6a,b), the determiner [l] assimilates to the following coronals before complex onsets; compared to Qassimi Arabic in (4b). It surfaces with a following epenthetic vowel before non-coronals in complex onsets (6c,d); compared to Qassimi Arabic in (4a). *CCC is satisfied in this variety by epenthesis as opposed to Qassimi Arabic where it is satisfied by deletion of the determiner consonant [l], cf. (4) and (5).

In Moroccan Arabic, the definite determiner case is different from that of Qassimi and Tunisian before complex onsets. The determiner /l/ surfaces faithfully before words with complex onsets creating tri-consonantal onset clusters (7a,b), and it assimilates to coronals in the same environment creating non-intervocalic geminates in initial onsets (7c,d).

(7)	Indefinite	Definite	Gloss
a.	ʕsal	**l**-ʕsal	The honey
b.	ʁraɑɑb	**l**-ʁraɑɑb	The crow
c.	ʒmal	**ʒ**-ʒmal	The camel
d.	nʒuum	**n**-nʒuum	The star

So, Moroccan Arabic allows word-initial tri-consonantal clusters in definite forms with three root nodes in contrary to Qassimi and Tunisian. Non-intervocalic initial geminates are also allowed in this variety as opposed to Tunisian Arabic where an epenthetic vowel is inserted before initial geminates and to Qassimi Arabic where the consonant of the determiner deletes. The differences between the dialects are caused by the different rankings they have for *CCC and *GGC.

In brief, this paper provides an analysis of the definite determiner of a Qassimi Arabic variety and argues that the determiners in this dialect are [a], [al], and [aG] as opposed to [al] and [aG] in MSA. It also compares the behavior of the definite determiner before onset clusters in this variety to two other Arabic varieties, Tunisian and Moroccan. This, to the best of the author's knowledge, is the first work to handle tri-consonantal onset clusters in terms of the definite forms of Arabic varieties.

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