

Emphasis spread in two dialects of Palestinian

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0. Introduction

In the consonant inventory of Palestinian Arabic, just as in all Arabic languages, so called *emphatics* are found.¹ These are coronal consonants with a pharyngeal secondary articulation and they have the property of spreading pharyngeality to all available segments in the word with a pharyngeal quality (also known as *emphasis spread*, henceforth ES). I will argue that the target class of segments which can be affected by ES is determined by a combination of two factors: a) the featural structure of the segment to be affected and b) its position in the syllable. I will explain the conditions on ES in terms of coda licensing (Goldsmith 1990) and of the Syllable Contact Law (Clements 1990, for an overview). In section 1 I will discuss the pattern of ES in Southern Palestinian, section 2 contains a discussion of ES in Northern Palestinian. The conclusions of this paper are presented in section 3.

1. Southern Palestinian

Leftward ES is unimpeded in Southern Palestinian, as can be seen in (1), (emphatic consonants are given in capitals and pharyngealized segments are indicated in boldface). The data are taken from Davis (1995).

(1)	ballaaS	‘thief’
	manaafiḐ	‘ashtrays’
	xayyaaT	‘tailor’
	nas^ʕaaT	‘energy’
	majaSSaSi^ʕ	‘it didn’t become solid’
	‘aT^ʕsaan	‘thirsty’

From the data in (1) it can be concluded that leftward spreading of emphasis is unimpeded; the rightward spread, however, can be blocked. This can be observed in the examples *‘aT^ʕsaan* and *majaSSaSi^ʕ*. In both examples the final syllable is unemphatic. One might think that /s^ʕ/ and /i/ are incompatible with emphasis but this

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is not entirely true. Compare *‘aTs’aan* with *nas’aaT* and *majaSSaSiS’* with *manaafiḌ* in which /s’/ and /i/ are both emphatic and unemphatic. Apparently, the rightward spread of emphasis is more restricted. In (2) the rightward spread of emphasis is illustrated.

- | | | |
|-----|-----------------|------------------------|
| (2) | Tuub-ak | ‘your (m. sg.) blocks’ |
| | Tiin-ak | ‘your (m. sg.) mud’ |
| | Sayyaad | ‘hunter’ |
| | ‘aTs’aan | ‘thirsty’ |
| | Ḍajjaat | ‘noise (pl.)’ |

From the examples *Tiin-ak*, *Sayyaad*, *‘aTs’aan* and *Ḍajjaat* it might be concluded that segments which are both [high] and [front], namely /i/, /y/, /s’/ and /j/, do not allow emphasisization. This is too rough a generalization, however. In (3a,b) examples in which the segments /i/, /y/, /s’/ and /j/ resist emphasisization are compared with examples in which these segments are affected by emphasis.

- | | | |
|-----|-------------------------------------|--------------------|
| (3) | emphasis and /i/, /y/, /s’/ and /j/ | |
| | a) opaque | b) transparent |
| | Tiin-ak | manaafiḌ |
| | Sayyaad | xayyaaT |
| | ‘aTs’aan | nas’aaT |
| | Ḍajjaat | majaSSaSiS’ |

These examples show that ES is blocked by a [high; front] segment that occurs to the right of an emphatic segment. The generalization of the spreading patterns that can be observed in (1-3) is given in (4).

- (4) Segments that are [high, front] cannot be emphatic if they occur to the right of an emphatic segment.

As far as I know, this is the typical blocking pattern of ES in Arabic dialects. If there is blocking of ES at all, it is spreading to the right which is blocked. This raises the question why segments to the right of an emphatic segment can block ES, but not segments to the left of an emphatic segment. This issue will be addressed in the next subsection.

1.1 Reasons for the asymmetry. The generalization in (4) above suggests that hierarchical relations between segments play a role in the process. In this section I will discuss from what independently motivated principles this would follow.

Goldsmith (1990) observes that the set of segments allowed in the coda is a subset of the segments that is allowed in the onset. In Japanese, for instance, only

nasals are allowed in the coda, while the complete set of consonants of Japanese is allowed in the onset (Goldsmith 1990). Therefore, he proposes a relation between the coda and the syllable on the one hand, and between the onset and the rhyme on the other hand. Taking up this idea, we might suppose that if a feature like [emphatic] occurs in the coda it is also allowed to occur anywhere else in the syllable.² Hence, there is no blocking if the emphatic consonant is in the coda.

The relation between onsets and rhymes is quite different. Anything that is allowed in the onset is not necessarily allowed in the rhyme and vice versa. As a consequence a rhyme constituent dominating a feature that is adversary to emphasis may resist its spread. Thus, since the relation between the coda and the syllable differs from the relation between the onset and the rhyme, a difference in the spreading of a feature from the coda and the onset respectively may be natural.

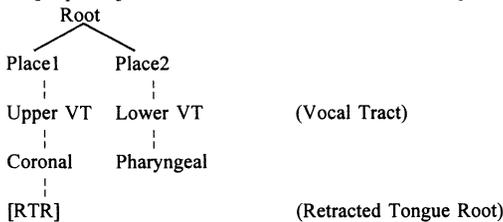
Intersyllabically, there is also a relation between the coda and a hetero-syllabic onset. This relation is expressed in the *Syllable Contact Law* (Clements 1990, for an overview), which holds that in a sequence of a coda consonant and an onset consonant the first is more sonorous than the second. The instantiation of this Law in Southern Palestinian may be that onsets dominating the features [high] and [front] resist pharyngealization because pharyngealization entails lowering and lowering entails becoming more sonorous.

1.2 Spreading in Southern Palestinian in constraints. The two forces that are at work in Southern Palestinian, one favoring ES and another frustrating it, can be formalized as constraints.

The first constraint ensures that consonants that are underlyingly emphatic surface as emphatic. In other words, [emphatic] cannot be deleted.

- (5) IDENT-IO [EMPHATIC] (McCarthy and Prince 1995)
An underlyingly emphatic segment should also be emphatic at the surface.

² The feature [emphatic] is used as a shorthand notation for the representation proposed by Davis (1995):



See Davis (1995) for arguments supporting this representation.

The second constraint, DEP-(SEG, [EMPHATIC]) (McCarthy and Prince 1995) ensures that the feature [emphatic] links up with all segments in the word. These two constraints would suffice if the emphasis would always spread to all segments in the word.³ This can be seen in a word like *ballaaS* in which ES is not hampered. In the tableau in (6), three candidates are compared: one in which the underlying feature [emphatic] is deleted, another in which the underlying feature [emphatic] has not spread and, finally, a candidate in which all segments are associated with the underlying feature [emphatic]. First consider the tableau (to save space emphatic segments are underlined and in bold face).

(6) tableau of *ballaaS*

ballaaS	IDENT-IO([EMPHATIC])	DEP-(SEG,[EMPHATIC])
ballaaS	*!	
ballaa <u>S</u>		*!*****
ballaaS		

As has been illustrated in (1-3) above, the facts of Southern Palestinian are more complex than is suggested in (6). In order to account for the complexity more constraints are needed. The first of these says that a syllable is completely emphatic if a segment in its rhyme is emphatic.

- (7) EMPHATIC- σ
A syllable must be emphatic if one of the rhyme segments is emphatic.

Now the question is: when is a rhyme segment legitimately emphatic? First of all, underlying rhyme segments are licit emphatic rhyme segments. One possibility is offered by the constraint IDENT-IO([EMPHATIC]). The other possibility for a rhyme segment to be legitimately emphatic is given in the constraint which is given in (8).

- (8) *RHYME_i ^ ONSET_j [EMPHATIC] (RH_i ^ ONSET_j [EM])
*unemphatic rhyme adjacent to a heterosyllabic emphatic onset.

³ Actually, this is the case in Cairene, where one emphatic segment in a word causes the whole word to be pharyngealized (Broselow 1976, Younes 1993).

In other words, a rhyme which is adjacent to a heterosyllabic emphatic onset must be emphatic. There are two more constraints, one prohibits [high, front] segments to be emphatic.

- (9) *_[HIGH, FRONT, EMPHATIC] (*_[HI,FR,EM])
 Segments that are [high, front] may not be [emphatic].

Another constraint requires that the string of emphatic surface segments are adjacent.

- (10) O-CONTIGUITY
 The string of [emphatic] output segments must be contiguous.

The interaction of the constraints *_[HI,FR,EM] and DEP-(SG,_[EM]) can be seen in the tableau in (11) in which the example /*Sayyaad*/ is evaluated. Three candidates are considered. In the first candidate only the first /s/ is emphatic.⁴ This candidate has the most violations against DEP-(SG,_[EM]). In the second candidate the first two segments /sa/ are emphatic, and that is in fact in fact the optimal candidate. In the third candidate every segment in the word is emphatic, which violates *_[HI,FR,EM]. Consider (11).

(11) tableau of *Sayyaad*

Sayyaad	* _[HI,FR,EM]	DEP-(SG, _[EM]).
<u>s</u> Sayyaad		*****
<u>sa</u> <u>yya</u> <u>ad</u>	*!*	

The interaction of the constraints EMPHATIC-σ, *RH_i^ONS_j[EM] and *_[HI,FR,EM] is illustrated in (12), where the candidates of the word *manaafiD* are compared. The first candidate only has an emphatic *D*, violating the constraint EMPHATIC-σ. This is the case because this constraint requires that a syllable is emphatic if a segment in its rhyme is emphatic. This candidate satisfies the constraint *_[HI,FR,EM], but it is of no avail because this constraint is ranked below EMPHATIC-σ. The high ranking of the constraint *RH_i^ONS_j[EM] ensures that the optimal candidate is emphatic throughout. In that case there are no unemphatic rhymes adjacent to emphatic heterosyllabic onsets.

⁴ For reasons of space the two highest ranked constraints, IDENT-IO([EM]) and O-CONT, are left out of the tableau.

(12) tableau of *manaafiḌ*

<i>manaafiḌ</i>	EMPHATIC-σ	*R _H ^ONS _i [EM]	*[HI,FR,EM]
<i>manaafiḌ</i>	*!		
<i>manaafiḌ</i>		*!	*
^{ES} <i>manaafiḌ</i>			*

1.4 *Conclusion for Southern Palestinian.* The pattern of ES follows from relations between syllable constituents and relations between syllables. This explains why the [high, front] segments in this language cannot be affected by ES if they are adjacent to an underlying emphatic on their left, while they can be affected if the emphatic occurs to their right. In the next section the ES in Northern Palestinian is discussed.

2. *Northern Palestinian*

The pattern of ES in Northern Palestinian is more restricted than in Southern Palestinian. This has some consequences for the constraints that will be assumed. In addition to the constraints proposed for Southern Palestinian, some constraints will be proposed which are more specific. These more specific constraints conceal the more general ones which are active in Southern Palestinian. This is an example of the Paninian Theorem (Prince and Smolensky 1993). Before I will propose the constraints that provide the pattern attested in Northern Palestinian I will present the relevant data.

2.1 *Patterns of ES in Northern Palestinian.* Before turning to the constraints needed in this dialect I will first present the data. Consider the data in (13).

(13) Leftward *ES* in Northern Palestinian

balaaTa	‘tile’
xayyaaT	‘tailor’
sʿalaliiT	‘kicks’
maxsʿuuT	‘scratched’
waSlaat	‘arrived (f. sg.)’

These examples bear great resemblance to the pattern of Southern Palestinian: all segments to the left of the emphatic consonant are emphatic. One difference already emerges in the final example, in which the final consonant is not emphatic. The constraint IDENT-IO([EMPHATIC]) (see (5) above) which ensures that nothing is deleted from the underlying form. Even more differences between Southern

Palestinian and Northern Palestinian can be seen in the pattern of rightward *ES* in Northern Palestinian (14).

(14)	Taaza	‘fresh’
	SabaaH	‘morning’
	manTaka	‘area’
	Snaaf	‘brands’
	‘aTs’aan	‘thirsty’
	Syaam	‘fast, abstaining from eating’
	Twaal	‘long (pl.)’
	SiHHa	‘health’
	kaTTuu‘a	‘piece of mat’

In the first three examples in (14) it can be observed that the rightward spread of emphasis in Northern Palestinian is restricted to the rhyme following the emphatic onset. A comparison of the form *waSlaat* with the form *‘aTs’aan* shows that a coda can make the following syllable emphatic, but it can not emphaticize an adjacent syllable of which the onset is /s/. Furthermore, it can be observed that, apart from /s/, the other blocking segments are /y/, /w/, /i/ and /u/. These segments are all [high].⁵ The restriction that *ES* is limited to the following nucleus is lifted if the syllable following this rhyme (the syllable following the rhyme to the right of the emphatic) has a laryngeal onset. If that is the case then emphasis spreads through the syllable starting with the laryngeal as well. In (14) this propagation through a laryngeal can be observed.

(14)	Saħan	‘he ground’
	Saħħab	‘he leveled a layer of small stones’
	Taa‘an	‘he stabbed repeatedly’
	‘azar	‘he invited’
	saʔal	‘he asked’

The peculiarity of laryngeals with respect to *ES* can be seen in, for example, *Saħħab* in which the first syllable, containing the emphatic segment, is emphatic and the second syllable, starting with a laryngeal, is emphatic as well. In the word *Taaza*, on the other hand, only the first syllable, which contains the emphatic, is emphatic. The final two examples, with the laryngeals /ʕ/ and /ʔ/ respectively, show that laryngeals themselves cannot give rise to *ES*.

⁵ Davis (1995) suggests that /j/ is a blocking segment as well, but the evidence bearing on this issue is scarce, mainly because words in which /j/ cooccurs with an emphatic segment are rare.

2.2 *Constraints and tableaux*. ES in Northern Palestinian is more restricted than it is in Southern Palestinian. As a consequence the constraints that have been proposed for Southern Palestinian can be used in addition to a few new constraints. The new constraints are given in (15-19). The constraint in (15) requires that a nucleus can only be emphatic if a tautosyllabic onset is.

- (15) EMPHATIC-NUC
Only a nucleus must be emphatic if its onset is emphatic.

Another constraint prohibits unemphatic rhymes adjacent to unemphatic heterosyllabic codas.

- (16) *CODA_i [EMPHATIC]^ ONSET_j
*Unemphatic onset adjacent to heterosyllabic emphatic rhyme.

Furthermore, there is a constraint saying that onsets can never be emphatic. The operation of this constraint is restricted by the constraints IDENT-IO([EMPHATIC]), which requires that segments which are underlyingly emphatic are emphatic on the surface as well and the constraint *RH_i^ONS_j[EM], which ensures that emphatic onsets are not adjacent to unemphatic heterosyllabic rhymes.

- (17) *ONSET[EMPHATIC]
An onset may not be emphatic.

The constraint that bars certain features from being emphatic is a little different from the constraint that barred features from being emphatic in Southern Palestinian, because the set of features that block ES is a bit different. In Southern Palestinian [high, front] segments block ES while in Northern Palestinian [high] segments block it.

- (18) *[HIGH, EMPHATIC]
Segments that are [high] cannot be emphatic.

Finally, there is a constraint demanding that laryngeals which are adjacent to an emphatic segment must be emphatic as well.

- (19) EMPHATIC-[LARYNGEAL]
A laryngeal segment adjacent to an emphatic segment must be emphatic.

The effect of the constraints *RH_i^ONS_j[EM] and EMPHATIC-NUC can be seen in tableau (20) in which the candidates of the input *balaaTa* are evaluated. It can be seen that the optimal candidate is emphaticized throughout.

(20) tableau of *balaaTa*

<i>balaaTa</i>	*RH _i ^ONS _j [EM]	EMPHATIC-NUC
balaa<u>Ta</u>	*!	
^{EM} balaa<u>Ta</u>		

In the next tableau, in which the candidates of the input *Taaza* are evaluated, the interaction between EMPHATIC-NUC and *ONSET[EMPHATIC] is illustrated. The constraint IDENT-IO([EMPHATIC]) is assumed to be undominated, therefore violating it is fatal and violations against *ONSET[EMPHATIC] arising from satisfactions of IDENT-IO([EMPHATIC]) are not included in the tableau. The candidate with only an emphatic *T* violates the constraint EMPHATIC-NUC, while the candidate which is emphatic throughout violates the constraint *ONSET[EMPHATIC].

(21) tableau of input *Taaza*

<i>Taaza</i>	EMPHATIC-NUC	*ONSET[EMPHATIC]
^{EM} <u>Ta</u>aza		
<u>Ta</u>aza	*!	
<u>Ta</u>aza		*

The effect of the constraints EMPHATIC-σ, *CODA_i [EMPHATIC]^ ONSET_j and EMPHATIC-NUC can be seen in (22). In this tableau, candidates of the input *waSlaat* are compared. It can be seen that the optimal candidate is emphatic throughout except for the final coda. The candidate that only has an emphatic first syllable violates *CODA_i [EMPHATIC]^ ONSET_j, the candidate that is completely emphatic violates EMPHATIC-NUC and the candidate in which only the *S* is emphatic violates EMPHATIC-σ.

(22) tableau of *waSlaat*

<i>waSlaat</i>	EMPHATIC-σ	*Co _i [EM]^ ONS _j	EMPHATIC-NUC
<u>wa</u>Slaat		*!	
<u>wa</u>Slaat			*!
^{EM} <u>wa</u>Slaat			

Before we conclude this paper, we will have to give an account of the behavior of laryngeals in Northern Palestinian. As the data in (14) show, laryngeals have the power to pass on emphasis. This is due to the constraint EMPHATIC-[LARYNGEAL]. This constraint requires that a laryngeal which is adjacent to an emphatic segment is emphatic as well. In tableau (22) the effects of the constraints EMPHATIC-NUC, EMPHATIC-[LARYNGEAL] and *ONSET[EMPHATIC] are illustrated. In this tableau, the word *Saħan* is evaluated. The first candidate violates the constraint EMPHATIC-[LARYNGEAL]; it has an unemphatic laryngeal adjacent to an emphatic segment. The second candidate violates the constraint EMPHATIC-NUC and the constraint *ONSET[EMPHATIC]; it has a coda which is illicitly emphatic and one emphatic onset too many. The third candidate only violates *ONSET[EMPHATIC].

(23) Tableau of *Saħan*

<i>Saħan</i>	EM-NUC	EM-[LAR]	*ONS[EM]
<u>Saħ</u> an		*!	
<u>Saħ</u> an	*!		
☞ <u>Saħ</u> an			*

In this section the constraints of Northern Palestinian are illustrated. These constraints are needed in addition to the constraints we have already seen in Southern Palestinian. Northern Palestinian differs from Southern Palestinian in that it is more specific in its restrictions on ES. In the next section the conclusions of this paper are presented.

3. Conclusion

In this paper the problem of asymmetric blocking of ES in two Palestinian dialects is addressed. In this account the asymmetric blocking of segments which are [high, front] (in Southern Palestinian) and [high] (in Northern Palestinian) is derived from the relations between positions in the syllable and the relation between syllables. The constraint which are at work in Northern Palestinian are more restrictive than those in Southern Palestinian, and this causes the difference between the dialects. However, the general thrust of the blocking pattern of ES is the same: segments to the right of an emphatic segments resist emphasis more easily than segments to the left. Davis

(1995) assumes that the rule which spreads emphasis to the right is subject to certain blocking effects, without addressing the question why the blocking is always to the right. The focus of this paper has been to try to explain why ES is blocked by certain segments to the right of an emphatic segment, but not by segments that are to the left. Interestingly, this blocking pattern is not only present in Palestinian dialects but also in other dialects exhibiting ES (Younes 1993).

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