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Turkish Emphatic Reduplication: Balancing Productive and Lexicalized Forms

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Abstract. In Turkish, the process of emphatic reduplication, the meaning of which is to accentuate the quality of an adjective, involves the copying of the initial (C)V of the base and then prefixing it, along with an additional affixal consonant from the set /p, s, m, r/, to the base. Not all emphatic forms are the result of a productive phonological process and a number of forms are in fact lexicalized, such that the affixal consonant which appears in these forms is not predictable. Wedel (1999) provides a list of elicited novel emphatic forms which provides insight into which forms are productive and which are lexicalized. The current analysis provides an Optimality Theoretical account of Turkish emphatic reduplication and examines the nature of lexicalized forms in light of Wedel's findings. The ranking offered in the current analysis correctly predicts which affixal consonant appears in productive forms and excludes lexicalized forms, which are determined on the basis of their lack of phonological productivity and on the results of Wedel's elicitations.

Keywords. Morphophonology, Optimality Theory, reduplication, Turkish

1. Introduction

Turkish emphatic reduplication functions to accentuate the quality of an adjective, as seen in (1).

(1)	güzel	'pretty'	güpgüzel	'very pretty'
	katı	'hard'	kaskatı	'hard as a rock'
	siyah	'black'	simsiyah	'pitch black'
	temiz	'clean'	tertemiz	'clean as a pin'
	yalnız	'alone'	yapayalnız	'all alone'
	parka	'piece'	paramparça	'torn to shreds/smashed to pieces'

(Göksel & Kerslake 2005)

This process of emphatic reduplication is not applied to new adjectives which enter Turkish. Emphatic prefixes are applied only to particular common adjectives. However, speakers are able to produce novel forms when prompted to do so (Wedel 1999). While the majority of emphatic forms adhere to a productive phonological process, a number of forms are lexicalized. Previous analyses of Turkish emphatic reduplication tend to vary in how this type of reduplication operates and in how many emphatic forms are lexicalized. In addition to considering previous analyses,

the current paper will explore how Turkish emphatic reduplication operates, how Optimality Theory (OT) handles this phenomenon, how phonologically productive the process is, and which emphatic forms are lexicalized and what the basis is for considering them as such.

2. The Process of Turkish Emphatic Reduplication

In Turkish emphatic reduplication, the initial (C)V of the base is copied and then prefixed, along with an affixal consonant from the set /p, s, m, r/ to the base, as seen in (2).

(2)	güzel	'pretty'	güpgüzel	'very pretty'
	uzun	'long'	upuzun	'very long'
	katı	'hard'	kaskatı	'hard as a rock'
	siyah	'black'	simsiyah	'pitch black'
	temiz	'clean'	tertemiz	'clean as a pin'
				(Göksel & Kerslake 2005)

In some cases, the (C)VC- emphatic prefix is followed by additional segmental material in the form of –A, –Il, or –Am, as shown in (3).

(3)	gündüz	'daytime/by day'	güpegündüz	'in broad daylight'
	yalnız	'alone'	yapayalnız	'all alone'
	çıplak	'naked'	çırılçıplak	'stark naked'
	parka	'piece'	paramparça	'torn to shreds/smashed to pieces'
				(Göksel & Kerslake 2005)

The forms in (3) are considered to be idiosyncratic and are not the result of a productive phonological process.[1]

This process of emphatic reduplication with an affixal consonant is quite interesting and is not uncommon. Partial reduplication with an affixal consonant for the purpose of creating emphatic constructions is found across Eurasian languages, including Buriat, Armenian, and Tuvan in addition to Turkish (Harrison & Raimy 2004). Tuvan, a Turkic language, creates emphatic forms via a process in which the initial (C)V is copied and followed with the affixal consonant /p/ and then the base, as seen in (4).

(4)	qara	'black'	qapqara	'very black'
	nogaan	'green'	nopnogaan	'very green'
	qızıl	'red'	qıpqızıl	'completely red'
	uzun	'long'	upuzun	'very long'
	türgen	'quick(ly)'	tüptürgen	'very quick(ly)'
	tʃıŋge	'thin'	tʃıptʃıŋge	'very thin'
	borbaq	'spherical'	bopborbaq	'completely spherical'

[1] Such forms will not be explored in this paper.

xalaan	'run'-PAST	xapxalaan	'ran really fast'
körbeen	'see'-NEG-PAST	köpkörbeen	'did not see at all'
saar	'milk'-P/F	sapsaar	'will definitely milk'
saybas	'milk'-NEG-FUT	sapsaybas	'will definitely not milk'

(Harrison & Raimy 2004)

Oroqen (Li & Whaley 2000), a Tungusic language spoken in China, employs a process to create emphatic forms in which the (C)VC of a word-initial closed syllable of an adjective is copied and prefixed to the base. If the initial syllable is open, the initial (C)V is copied and followed by the affixal consonant /p/ and then the base. Emphatic Oroqen forms are shown in (5).

(5)

bagdarın	'white'	bagbagdarın	'very white, white as snow'
ʃiŋarın	'yellow'	ʃibʃiŋarın	'very yellow, golden yellow'
kara	'black, dark'	kabkara	'glossy black, very dark'
kɔŋɔrın	'black'	kɔbkɔŋɔrın	'very black'

(Li & Whaley 2000)

3. Previous Accounts

The earliest account of Turkish emphatic reduplication is that of Yavas (1980). While Yavas considers all emphatic forms to be lexicalized, it has become evident that a phonological process is occurring in most of those emphatic forms containing only the (C)VC prefix and this process governs the selection of the affixal consonant from the set /p, s, m, r/ (Kelepir 2000; Wedel 2000, 1999; Taneri 1990; Demircan 1987).

According to Demircan (1987), the process of creating emphatic forms is as follows: the initial (C)V is reduplicated and, along with an affixal /p/, is prefixed to the base. The affixal /p/ is replaced with /s/, /m/, or /r/ so as to avoid having an affixal consonant that is identical to any of the base consonants. Demircan also states that the affixal consonant must also contrast with the second consonant of the base. The distinctive features of base consonants which must contrast with those of the affixal consonant are [anterior], [coronal], [continuant], [strident], [sonorant], [voice], and [nasal]. In his analysis, Demircan offers some very useful rule-based insights regarding the selection of the affixal consonant, especially that /p/ operates as the default. Demircan also conducts an experiment in which she elicits emphatic forms from informants, eliciting both attested and nonsense forms. His results essentially point to the level of phonological productivity of particular affixal consonants.

Taneri (1990) also offers a rule-based approach. In his approach, /p/ appears as the affixal consonant if the consonants of the base are not labial. /s/ appears if the first consonant of the base is not a sibilant. /m/ appears if the second consonant of the base is not labial and if neither the first nor the second consonants of the base are nasals, trills, or laterals. /r/ appears if none of the consonants of the base are trills. Taneri's analysis is rather general. While the analysis gets the point that some degree

of identity avoidance occurring when selecting the affixal consonant, the analysis fails to contribute anything other than that observation.

For Kelepir (2000), the quality of the first and second consonants of the base plays a role in the selection of the affixal consonant, but it is the second consonant of the base which is primarily responsible for the selection of the affixal consonant. Kelepir's analysis is couched in OT and proposes that the affixal consonant is forced to be unfaithful to its correspondent in the base. The dominant constraint that causes the variation in the affixal consonant is a family of anti-faithfulness constraints as opposed to faithfulness constraints. Affixal consonants tend to differ from their correspondents with respect to place features such as coronal, labial, and velar. In the majority of forms which contain the affixal consonant /p/, the base correspondent is coronal. In the majority of forms which contain the affixal consonant /m/, the base correspondent is either coronal or velar. In addition, base consonants contrast with the affixal consonant in sonority. If a base consonant is [+sonorant], the affixal consonant that is selected is /p/. Otherwise, if the base consonant is [-sonorant], the affixal consonant selected is /m/. The constraints Kelepir uses are shown in (6) through (12) and his final ranking in (13).

(6) ***COR ~ COR**
Coronals do not correspond to coronals

(7) ***αSON ~ αSON**
The new consonant and its base correspondent contrast in sonority

(8) ***LAB ~ LAB**
Labials do not correspond with labials

(9) ***labial-labial (adj.)**
Do not have adjacent labial(RED)-labial(BASE)

(10) ***αCONT ~ αCONT**
The base consonant and the new consonant must contrast in continuancy

(11) ***Strident**
The base consonant and the new consonant must contrast in stridency

(12) ***-pb-**
No *-pb-* sequences

(13) ***Strident >> *-pb- >> *labial-labial >> *αCONT ~ αCONT >> *COR ~ COR, *LAB ~ LAB >> *αSON ~ αSON**

While Kelepir does present a compelling analysis, she does not examine or address any exceptions. Also, Kelepir states that features such as [continuant], [coronal], [labial], and [sonorant] are in contrast to the features of the affixal consonant, but she does not substantiate these claims with any data or provide any motivation behind selecting these features.

Additionally, there are forms which Wedel (1999) considers exceptional on the basis of their degree of featural similarity between the affixal consonant and the base consonants, yet Kelepir considers such forms to be productive.

Wedel (1999, 2000) creates an analysis in which his generalizations are derived from attested forms and solicited forms of adjectives which do not undergo the process of emphatic reduplication. According to Wedel, the affixal consonant is taken

from the set /p, s, m/. /p/ is not selected if the first consonant of the base is labial. The affixal consonant must be non-identical to both the first and second consonants of the base. /p/ is the default affixal consonant and appears if the first consonant of the base is not labial and if it is not identical to both the first and second consonants of the base. The constraints and ranking offered by Wedel (2000) are shown in (14) through (17).

(14) ***Plosive - αPlace**
No plosive preceding a homorganic consonant

(15) ***GEM**
Sequences of two identical consonants are not allowed

(16) ***Repeat**
Identical strings in the base and reduplicant are not allowed

(17) ***Repeat, *GEM >> *Plosive – αPlace**

Wedel's analysis is elegant, successful, and concise. However, in contrast to Demircan and Kelepir who point out the specific features with which the affixal consonant disagrees with the first and in some cases the second consonant of the base, Wedel's analysis does appear rather general as it does not address the specific featural differences that operate in the process of emphatic reduplication. In ignoring these differences, Wedel's analysis bears the implication that these differences are not part of the productive phonological process that derives emphatic forms.

4. The Nature of the Affixal Consonant

What has become clear from the previous analyses of Turkish emphatic reduplication is that the choice of the affixal consonant operates to minimize featural similarity with consonants in the base, in particular, the first and second consonants (Wedel 1999). However, there is some disagreement among speakers regarding which affixal consonant is to be used in certain forms, which suggests that there are forms which are lexicalized and forms which obey a phonological process.

In examining the affixal consonant, it is worth investigating if the consonant is indeed affixal. Wedel (1999) argues that the consonant is actually affixal, as opposed to being in correspondence with the base or epenthetic. According to Wedel, in most cases, the interpolated consonant cannot be derived from the second consonant of the bases via dissimilation. Bases which are CVV-initial still take a CVC emphatic prefix. The vowel of the base is clearly not in correspondence with the final consonant of the prefix. With respect to the consonant being epenthetic in nature, Wedel mentions that the segments /p, s, m, r/ do not resemble what he would consider default segments of Turkish. Epenthetic segments are not governed by faithfulness to the input and can be selected to minimize markedness. Consequently, they appear as contextually conditioned default segments.

Additionally, the affixal consonant has no single form in the underlying representation. /p/ is the most widely used affixal consonant and has been considered the underlying form by Demircan (1987). According to Yu (1999), because the affixal consonants do not form a natural class, phonotactic constraints are unable to derive

the surface form from one single underlying form. Instead, Yu says that the consonant is simply realized from the set /p, s, m, r/.

5. Current Analysis

As has been made evident in previous analyses, the selection of the affixal consonant involves selecting the consonant on the basis of its dissimilarity with either or both the first or second consonant of the base. The analysis offered here takes into consideration the affixal consonant's featural dissimilarity with both the first and second consonants of the base and operates under the same assumption as Yu (1999) in that the affixal consonant does not have a single underlying form and is instead realized from the set /p, s, m, r/.

Of the affixal consonants, /p/ and /s/ have the widest distribution and /m/ and /r/ have a dramatically decreased distribution in comparison, as seen in the forms listed in the appendix.[2] In addition, in Wedel's (1999) elicitations of novel emphatic forms, /p/ and /s/ were selected more often as the affixal consonant that /m/ or /r/. In fact, /r/ was never selected as the affixal frequency in Wedel's trials, indicating that forms containing /r/ as the affixal consonant are all lexicalized. In addition, only a handful of attested forms exist which contain /r/ as the affixal consonant. As a side note, it is worth mentioning that, of these affixal consonants, /p/ is the least sonorous, /s/ is more sonorous than /p/, /m/ is more sonorous than /s/, and /r/ is the most sonorous. The lack of sonority seems to correlate with the frequency of use of the affixal consonant. However, the level of sonority within the base does not seem to play a role in the selection of the affixal consonant.

As the affixal consonant is prohibited from being identical to the first and second consonants of the base, constraints are necessary to ensure this. To this end, the following constraint must be highly ranked.

(18) ***Repeat**
Identical strings in the base and reduplicant are not allowed
(Wedel 1999, 2000)

If it happens that the affixal consonant is identical to the second consonant of the base, then the CVC of the emphatic morpheme is identical to the initial CVC of the base, thus incurring a violation of *Repeat. According to Yip (1996, 1998), this sort of avoidance of repetition in reduplication may reflect an advantage in retaining minimally distinguishing contrast between morphemes, thus making it easier to distinguish the base from the reduplicant.

With respect to the first consonant of the base, the affixal consonant tends to disagree with it in terms of the features [coronal], [continuant], [strident], and [nasal]. Specifically, the affixal consonants /p/ and /s/ tend to disagree with the first consonant of the base in the features [coronal], [continuant], and [strident]. The

[2] The emphatic forms listed in the appendix represent the majority of emphatic forms which are not followed by –A, –Il, or –Am.

affixal consonant /m/ tends to disagree with the first consonant of the base in the feature [nasal] and, to a lesser extent, [coronal] and [continuant].

The affixal consonant /r/, which appears in lexicalized forms only, lacks any significant disagreement within these features.

In (19) through (21), feature charts are provided for each of the affixal consonants along side feature charts for the first consonants of the base which appear in words with the corresponding affixal consonants.[3, 4]

(19)

	Affixal consonant	First consonant of the base									
	p	c	ç	d	g	k	s	t	Y	z	j
coronal	-	+	+	+	-	-	+	+	-	+	+
continuant	-	-	-	-	-	-	+	-	+	+	+
strident	-	+	+	-	-	-	+	-	-	+	+
nasal	-	-	-	-	-	-	-	-	-	-	-

(20)

	Affixal consonant	First consonant of the base							
	s	b	c	d	k	m	p	t	Y
coronal	+	-	+	+	-	-	-	+	-
continuant	+	-	-	-	-	-	-	-	+
strident	+	-	+	-	-	-	-	-	-
nasal	-	-	-	-	-	+	-	-	-

(21)

	Affixal consonant	First consonant of the base			
	m	b	d	s	y
coronal	-	-	+	+	-
continuant	-	-	-	+	+
strident	-	-	-	+	-
nasal	+	-	-	-	-

With respect to the second consonant of the base, the affixal consonant tends to disagree with it in terms of the features [coronal], [continuant], [nasal], and [voice]. The affixal consonant /p/ exhibits disagreement with the second consonant of the base in terms of the features [coronal], [continuant], and [voice]. The affixal consonant /s/ exhibits disagreement with the second consonant of the base in terms of the features [continuant] and [voice]. The affixal consonant /m/ exhibits disagreement with the second consonant of the base in terms of the features [coronal]

3 The feature charts in (19) through (24) are based solely on the emphatic forms provided by Göksel & Kerslake (2005).

4 A feature chart is not provided for /r/ as it is used in lexicalized forms only.

and [nasal]. In (22) through (24), feature charts are provided for each of the affixal consonants along side feature charts for the second consonants of the base which appear in words with the corresponding affixal consonants.

(22)

	Affixal consonant	Second consonant of the base								
	p	n	v	r	l	z	s	y	t	g
coronal	-	+	-	+	+	+	+	-	+	-
continuant	-	-	+	-	+	+	+	+	-	-
nasal	-	+	-	-	-	-	-	-	-	-
voice	-	+	+	+	+	+	-	+	-	+

(23)

	Affixal consonant	Second consonant of the base											
	s	y	d	l	t	v	b	ç	c	r	m	p	g
coronal	+	-	+	+	+	-	-	+	+	+	-	-	-
continuant	+	+	-	+	-	+	-	-	-	-	-	-	-
nasal	-	-	-	-	-	-	-	-	-	-	+	-	-
voice	-	+	+	+	-	+	+	-	+	+	+	-	+

(24)

	Affixal consonant	Second consonant of the base							
	m	ş	y	k	r	z	c	s	j
coronal	-	+	-	-	+	+	+	+	+
continuant	-	+	+	-	-	+	-	+	+
nasal	+	-	-	-	-	-	-	-	-
voice	+	-	+	-	+	+	+	-	+

In the charts in (19) through (24), it is clear that both the first and second consonants of the base contrast with the affixal consonant in terms of the features [coronal], [continuant], and [nasal]. To accommodate these contrasts, the following constraints are necessary:

(25) **(non)COR ~ (non)COR**
Coronals correspond to non-coronals and non-coronals correspond to coronals

(26) ***αContinuant ~ αContinuant**
The affixal consonant must contrast with base consonants in the feature [continuant]

(Kelepir 2000)

(27) ***αNasal ~ αNasal**
The affixal consonant cannot agree with the first two base consonants in the feature [nasal]

The constraint (non)COR ~ (non)COR is very much in the same vein as the constraint *COR ~ COR (Kelepir 2000), which stipulates that coronals do not correspond to coronals. In this case, (non)COR ~ (non)COR ensures that coronals pattern with non-coronals and non-coronals pattern with coronals.

Since /p/ and /s/ occur most frequently in emphatic forms, with /p/ occurring more frequently than /s/, it is important to rank the constraints (non)COR ~ (non)COR and *αContinuant ~ αContinuant to reflect this distribution. To select /p/ and /s/, it is necessary to rank *αContinuant ~ αContinuant quite highly, as both /p/ and /s/ require disagreement between the affixal consonant and base consonants in the feature [continuant]. As /p/ disagrees with both the initial base consonants in the feature [coronal] and /s/ only does so with the first consonant of the base, (non)COR ~ (non)COR must be ranked above *αContinuant ~ αContinuant to ensure that /p/ is selected more often than /s/. As /m/ does not surface in emphatic forms particularly often, the constraint *αNasal ~ αNasal need not be highly ranked. The relative ranking of these constraints is shown in (28).

(28) **(non)COR ~ (non)COR >> *αContinuant ~ αContinuant >> *αNasal ~ αNasal**

As /p/ and /s/ tend to disagree with the first consonant of the base in the feature [strident] and with the second consonant in the feature [voice], the following constraints are necessitated:

(29) ***αStrident ~ αStrident**
Adjacent consonants in the reduplicant and base must contrast in stridency

(30) ***αVoice ~ αVoice**
The affixal consonant cannot agree with the second base consonant in the feature [voice]

To ensure the selection of /p/ over /s/, the constraints *αStrident ~ αStrident and *αVoice ~ αVoice cannot be ranked above or equal to (non)COR ~ (non)COR. Additionally, the constraints *αStrident ~ αStrident and *αVoice ~ αVoice must be ranked above *αNasal ~ αNasal to ensure the selection of /s/ over /m/. The relative ranking of these constraints is shown in (31).

(31) **(non)COR ~ (non)COR >> *αContinuant ~ αContinuant, *αStrident ~ αStrident, *αVoice ~ αVoice >> *αNasal ~ αNasal**

The constraint *Repeat must also be placed within this ranking. As *Repeat is necessary to prevent the affixal consonant and the second consonant of the base from being identical, it does not operate to ensure that /p/ is selected more often than /s/ or /s/ over /m/. For this reason, *Repeat is undominated and enters the ranking in the following manner:

(32) ***Repeat >> (non)COR ~ (non)COR >> *αContinuant ~ αContinuant, *αStrident ~ αStrident, *αVoice ~ αVoice >> *αNasal ~ αNasal**

In addition to the constraints discussed so far, a repair constraint is necessary. In the following tableau, the ranking from (32) incorrectly selects *gesgenç* as the emphatic form of *genç* ('young'), instead of *gepgenç*, as seen in (33).

(33) *genç* → *gepgenç*
'young'

ge-C_{affix}-genç	*Repeat	(non)COR ~ (non)COR	*αContinuant ~ αContinuant	*αStrident ~ αStrident	*αVoice ~ αVoice	*αNasal ~ αNasal
ge-p-genç		*	*!*	*		*
☞ ge-s-genç		*				*
ge-m-genç		*	*!*	*	*	*

The incorrect selection of /s/ over /p/ occurs in all forms in which the base is *g*-initial. To ensure that /p/ is correctly selected in these instances, the following repair constraint is necessary:

(34) ***s-g***
Sequences of *s-g* are not permitted

The constraint *s-g militates against sequences of *s-g*. A Turkish language consultant and a search of the Turkish Electronic Living Lexicon (TELL) database reveal that the only word containing the *s-g* sequence is *asgari* 'minimum', which originates from Arabic. With respect to *s-g, if this constraint is highly ranked, such that it is ranked intermediate to *Repeat and (non)COR ~ (non)COR, as shown in the final ranking in (35), the correct form will be deemed optimal, as seen in (36).

(35) ***Repeat >> *s-g >> (non)COR ~ (non)COR >> *αContinuant ~ αContinuant, *αStrident ~ αStrident, *αVoice ~ αVoice >> *αNasal ~ αNasal**

(36)

ge-C_{affix}-genç	*Repeat	*s-g	(non)COR ~ (non)COR	*αCont ~ αCont	*αStrid ~ αStrid	*αVoice ~ αVoice	*αNasal ~ αNasal
☞ ge-p-genç			*	**	*		*
ge-s-genç		*!	*				*
ge-m-genç			*	**	*	*!	*

The success of the final ranking in (35) is further exemplified in the following tableaux:

(37) *dar* → *dapdar*
'narrow'

da-C_{affix}-dar	*Repeat	*s-g	(non)COR ~ (non)COR	*αCont ~ αCont	*αStrid ~ αStrid	*αVoice ~ αVoice	*αNasal ~ αNasal
☞ da-p-dar				**	*		**
da-s-dar			*!*				**
da-m-dar				**	*	*!	

(38) *sivri → sipsivri*
'pointed (as of a nail tip)'

si-C_{affix}-sivri	*Repeat	*s-g	(non)COR ~ (non)COR	*αCont ~ αCont	*αStrid ~ αStrid	*αVoice ~ αVoice	*αNasal ~ αNasal
☞ si-p-sivri			*				**
si-s-sivri			*	*!*	*		**
si-m-sivri			*			*!	

(39) *kıvrak → kıskıvrak*
'agile'

kı-C_{affix}-kıvrak	*Repeat	*s-g	(non)COR ~ (non)COR	*αCont ~ αCont	*αStrid ~ αStrid	*αVoice ~ αVoice	*αNasal ~ αNasal
☞ kı-s-kıvrak				*			**
kı-p-kıvrak			*!*	*	*		**
kı-m-kıvrak			*!*	*	*	*	

(40) *yumru → yusyumru*
'curled'

yu-C_{affix}-yumru	*Repeat	*s-g	(non)COR ~ (non)COR	*αCont ~ αCont	*αStrid ~ αStrid	*αVoice ~ αVoice	*αNasal ~ αNasal
☞ yu-s-yumru				*			*
yu-p-yumru			*!*	*	*		*
yu-m-yumru	*!		**	*	*	*	*

(41) *sıkı → sımsıkı*
'tight'

sı-C_{affix}-sıkı	*Repeat	*s-g	(non)COR ~ (non)COR	*αCont ~ αCont	*αStrid ~ αStrid	*αVoice ~ αVoice	*αNasal ~ αNasal
☞ sı-m-sıkı			*	*			
sı-p-sıkı			*	*		*!	**
sı-s-sıkı			*	*	*!	*	**

(42) *başka → bambaşka*
'different'

ba-C_{affix}-başka	*Repeat	*s-g	(non)COR ~ (non)COR	*αCont ~ αCont	*αStrid ~ αStrid	*αVoice ~ αVoice	*αNasal ~ αNasal
☞ ba-m-başka			*	*	*		
ba-p-başka			*	*	*	*!	**
ba-s-başka			*	*		*	*!*

6. What is Productive and What is Lexicalized?

As has been mentioned, all emphatic forms containing /r/ as the affixal consonant are lexicalized. This generalization is primarily based on the novel emphatic forms

elicited by Wedel (1999), in which none contained /r/ as the affixal consonant, indicating that the /r/ forms are not productive. So the question remains as to which emphatic forms containing /p/, /s/, or /m/ are productive and which are lexicalized.

In examining word lists containing emphatic forms provided by Göksel & Kerslake (2005) and Wedel (1999), there were 126 unique emphatic forms containing /p/, /s/, or /m/. Of these 126 forms, the ranking in (35) correctly predicts the affixal consonant for 92 (71%) of the forms. These forms can be narrowed down by looking solely at unique phonological environments, defined according to the first and second consonants of the base. In the word lists, there are 70 unique phonological environments and the ranking in (35) accounts for 55 (79%). Examples of suboptimal forms deemed to be lexicalized can be found in (43) through (45).

(43) Lexicalized /p/ forms

Base	*Reduplicant*	*Optimal affixal consonant*
kısa	kıpkısa	/m/
kara	kapkara	/s/
karanlık	kapkaranlık	/s/
kızıl	kıpkızıl	/s/
koyu	kopkoyu	/s/
yanlış	yapyanlış	/s/
yeni	yepyeni	/s/

(44) Lexicalized /s/ forms

Base	*Reduplicant*	*Optimal affixal consonant*
cavlak	cascavlak	/p/

(45) Lexicalized /m/ forms

Base	*Reduplicant*	*Optimal affixal consonant*
beyaz	bembeyaz	/s/
bok	bombok	/s/
buruşuk	bumburuşuk	/s/
dik	dimdik	/s/
sıcacık	sımsıcacık	/p/
sıcak	sımsıcak	/p/
siyah	simsiyah	/p/

To further the case for the existence of lexicalized emphatic forms, the same phonological environment can be found in a phonologically productive form and a lexicalized form, as exemplified in (46).

(46)

	Base	*Reduplicant*
a.	**ba**yat	basbayat (productive)
	beyaz	bembeyaz (lexicalized)
b.	**ber**aber	besberaber (productive)
	buruşuk	bumburuşuk (lexicalized)
c.	**düz**gün	düpdüzgün (productive)
	düz	dümdüz (lexicalized)

In examining the 66 novel forms elicited by Wedel (1999), the ranking in (35) accounts for 57 (86%). It must be noted that there are some interesting tendencies occurring within these novel forms. For instance, 8 forms allow for variation between /m/ and /s/ as the affixal consonant. For these forms, the ranking offered in the current analysis tends to select /s/ as the affixal consonant. There are also 8 forms which allow for variation between /s/ and /p/. Of these forms, the ranking selects /s/ for 7 and /p/ for 1.

In examining the 9 cases of novel forms in which the ranking fails to select the correct affixal consonant, 5 of them can be accounted for on the basis of variation. For instance, when informants were given the forms *tıkız* and *tıkalı*, for which the first consonant is *t* and the second is *k*, informants selected /p/ as the affixal consonant. Yet, when given the form *tokgüzlü*, which possesses the same phonological environment, most informants selected /m/ as the affixal consonant, while others selected /p/ or /s/. According to the ranking offered in the current analysis, such a phonological environment would require a candidate with /s/ as the affixal consonant. When informants were given the form *terbijeli*, they tended to select /s/ as the affixal consonant, whereas the ranking selects /p/, as in the attested emphatic form *tupturuncu*, which possesses the same phonological environment. When informants were given the form *tipsiz*, they tended to select /m/ as the affixal consonant, although some selected /s/. The ranking would select /s/ in such a case, as it does in the attested emphatic forms *tostopaç*, *tostoparlak*, and *tostop* which have the same phonological environment as the novel form. While the ranking tends to select the correct affixal consonant for the majority of the novel forms and a good number of the cases in which it runs into trouble are the result of variation, it is possible that the remaining cases of novel which the ranking does not account for are the result of analogy to similar structures.

As the ranking offered in the current analysis predicts the correct outcome in the majority of attested cases and the majority of Wedel's (1999) novel forms, the ranking is thus largely successful in accounting for emphatic forms.

7. Conclusion

While some Turkish emphatic forms are lexicalized, the majority undergo a productive phonological process. The goal of this paper has been to identify the phonological process which generates these productive forms and to isolate those forms which are lexicalized. In the previous section, it was shown that words containing similar phonological environments, such as *bayat* and *beyaz*, undergo reduplication with different affixal consonants. Thus, at least one of these forms must be considered lexicalized, as the affixal consonant is not predictable. When novel emphatic forms are elicited, informants generally rely on this productive process to create them (Wedel 1999). What has been shown in the analysis offered here is that the selection of the affixal consonant is contingent with its dissimilarity with the first two consonants of the base. The analysis presented in this paper adds to the analyses offered by Demircan (1987) and Kelepir (2000) by correctly identifying that it is both consonants of the base which are relevant to the process of selecting the affixal

consonant and further extends the analysis offered by Wedel (1999, 2000) by specifying the exact features which play a significant role in the process of emphatic reduplication.

8. References

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9. Appendix: Reduplicated Forms

9.1. Affixal consonant /p/

Stem	*Emphatic form*	
canlı	capcanlı	'alive'
çevre	çepçevre	'surrounding'
çirkin	çipşirkin	'ugly'
dar	dapdar	'narrow; tight'
daracık	dapdaracık	'very narrow; very tight'
derin	depderin	'deep'
dinç	dipdinç	'youthful'
diri	dipdiri	'live'
dolu	dopdolu	'full'
durgun	dupdurgun	'placid'
duru	dupduru	'limpid'
düzgün	düpdüzgün	'straight'
gece	gepgece	'night'
genç	gepgenç	'young'
geniş	gepgeniş	'wide'
gergin	gepgergin	'taut; nervous'
gür	güpgür	'dense'
güzel	güpgüzel	'beautiful'
hızlı	hıphızlı	'quick'
kahve	kapkahve	'coffee; coffee color'
kalın	kapkalın	'thick'
kapalı	kapkapalı	'shut; overcast'
kara	kapkara	'black'
karanlık	kapkaranlık	'dark (relating to the amount of light)'
kel	kepkel	'bald'
kırmızı	kıpkırmızı	'red'
kısa	kıpkısa	'short'
kızıl	kıpkızıl	'red (of hair, fur, etc.)'
kirli	kipkirli	'dirty'
kolay	kopkolay	'easy'
koyu	kopkoyu	'dark (of colors); thick (inconsistency)'
kuru	kupkuru	'dry'
lacivert	laplacivert	'navy blue'
sa:	sapsa:	'alive'

sade	sapsade	'plain'
salak	sapsalak	'silly'
sa:lam	sapsa:lam	'well-built; healthy'
sarı	sapsarı	'yellow'
serin	sepserin	'cool'
sevimli	sepsevimli	'cute'
sıkkın	sıpsıkkın	'bored'
sıska	sıpsıska	'skinny'
silik	sipsilik	'faint'
sivri	sipsivri	'pointed'
soğuk	sopsoğuk	'cold'
sulu	supsulu	'watery'
şekerli	şepşekerli	'sugary'
şirin	şipşirin	'cute'
tatlı	taptatlı	'sweet'
taze	taptaze	'fresh'
turuncu	tupturuncu	'orange (in color)'
tuzlu	tuptuzlu	'salty'
yanlış	yapyanlış	'wrong'
yeni	yepyeni	'new'
yakışıklı	yapyakışıklı	'handsome'
yalnız	yapyalnız	'lonely'
yaşlı	yapyaşlı	'old'
yavaş	yapyavaş	'slow'
zayıf	zapzayıf	'thin'
zengin	zepzengin	'rich'

9.2. Affixal consonant /s/

Stem	*Emphatic form*	
bayağı	basbayağı	'trashy'
bayat	basbayat	'stale'
bedava	besbedava	'free, complimentary'
belli	besbelli	'obvious'
beraber	besberaber	'together'
berrak	besberrak	'clear; limpid'
beter	besbeter	'terrible'
bütün	büsbütün	'complete'
cavlak	cascavlak	'naked; barren'
cıbıl	cıscıbıl	'naked'
cıbıldak	cıscıbıldak	'naked'
cıvık	cıscıvık	'gooey'
doğru	dosdoğru	'right, straight'
katı	kaskatı	'hard, solid'
kıvrak	kıskıvrak	'agile'

koca	koskoca	'large'
kocaman	koskocaman	'very large'
komik	koskomik	'funny'
kötürüm	köskötürüm	'crippled'
küçük	küsküçük	'little'
kütük	küskütük	'log (of wood); log-like'
mavi	masmavi	'blue'
mor	mosmor	'purple'
pembe	pespembe	'pink'
tamam	tastamam	'complete'
topaç	tostopaç	'spinning top'
toparlak	tostoparlak	'round'
yumru	yusyumru	'lump; globular'
yumuşak	yusyumuşak	'soft'
yuvarlak	yusyuvarlak	'round'

9.3. Affixal consonant /m/

Stem	*Emphatic form*	
başka	bambaşka	'different'
bey	bembey	'sir; gentleman'
beyaz	bembeyaz	'white'
boş	bomboş	'empty'
bok	bombok	'shitty'
buruşuk	bumburuşuk	'wrinkled'
cilk	cimcilk	'squishy'
çi:	çimçi:	'raw'
dazlak	damdazlak	'bald'
dik	dimdik	'erect'
düz	dümdüz	'straight'
kar	kamkar	'profit'
pis	pimpis	'dirty'
sıcacık	sımsıcacık	'warm'
sıcak	sımsıcak	'hot'
sık	sımsık	'frequent; dense'
sıkı	sımsıkı	'tight'
siyah	simsiyah	'black'
takır	tamtakır	'empty'
yassı	yamyassı	'flat'
yaş	yamyaş	'damp'
yeşil	yemyeşil	'green'

9.4. Affixal consonant /r/

Stem	*Emphatic form*	
çabuk	çarçabuk	'quick'
çıplak	çırçiplak	'naked'
perişan	perperişan	'miserable'
sebil	sersebil	'lavish'
sefil	sersefil	'miserable; wretched'
sıklam	sırsıklam	'wet'
temiz	tertemiz	'clean'