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### A TYPE OF REDUPLICATION IN TURKISH

### Mübeccel Taneri

Abstract: This is an attempt to describe one of several types of reduplication in Turkish, based on a piece of data elicited from 32 native speakers.\* What was known as an irregular case revealed itself as a complicated pattern of dissimilation. Although some rules postulated can account for most of the data, some varying forms call for more research for a more unified explanation.

There is a reduplication phenomenon in Turkish in which intensity in semantic content of adjectives and adverbs is signaled. In the literature reduplication is characterized as "an affixation of a Consonant-Vowel skeleton, which is itself a morpheme, to a stem" (Marantz 1982:437). Turkish differs from many languages that exhibit various types of reduplication processes in that in Turkish an additional, linking phonological element besides the reduplicate is involved. Observe the following:

kara	'black'	kapkara	'jet black'
yass±	'flat'	yamyass±	'completely flat'
temiz	'clean'	tertemiz	'very clean'
yamuk	'uneven'	yasyamuk	'shapeless'
esk'i	'old'	epesk'i	'very old'

In the above forms the first vowel and any preceding consonant is reduplicated and prefixed to the full

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form with one of the linking elements (henceforth LE), -p-, -s-, -m-, or -r-.

The choice of LE's is viewed as not having "any discernible phonological conditioning" (Swift 1961:123). The purpose of this paper is to try to identify the nature of the seemingly irregular formation and present a formal description of this type of reduplication in Turkish.

Reduplicated forms of about 300 adjectives and adverbs were obtained from a total of 32 native speakers (see Appendix A and Appendix B). Initially the author intended to consider possible different usages varying with the age and sex of her subjects, and for this reason the 32 speakers were selected to represent 4 different groups identified as 1. male-adults (from age 18 to 35), 2. other males (age 35 and above), 3. female adults (from age 18 to 35), and 4. other females (35 and above). It was observed, however, that differences in usage did not originate from the age or sex of the individual but, partly from regional differences and, most of all, from differing registers.

If a subject happened to be interested in language, good about visualizing a situation, and felt comfortable with the conductor of the elicitation, he or she would generously apply the reduplication to many items. Otherwise, most of them refrained to committing themselves to many kinds of usage. If, however, speakers were provided a possible context, they would either go along with a suggested reduplication or point out that they had heard the form but never used it. Such intolerence in the usage of some possible forms seems to be due to a covert concern about the possiblity of being stigmatized socially or culturally. The layout of the data, therefore, does not disclose any age and sex differences in usage. Nor do the data reveal systematic regional differences at present since the elicitation was not originally designed to achieve this.

When the data given as Appendix A are examined, it may seem that the results of the elicitation are incredibly unpredictable. Though there is sometimes a significant difference in the functional load (indicated parenthetically as the number of subjects who used the intensified form), the speakers often displayed an array of different choices of the inserted linking elements. The following examples are illustrative:

-p- -m- -s- -r- cepčevik' (5) čemčevik' (2) česčevik' (2) čerčevik' (2) 'very swift'

čapčarak' (17) čamčarak' (2) časčarak' (2)

'completely rotten'

g'epg'evšek' (8) g'emg'evšek' (2) g'esg'evšek' (2) -

'very loose'

kapkat ± (7) kaskat ± (22) -

'very thick; stiff'

k'öpk'ötü (8) k'ömk'ötü (1) k'ösk'ötü (9) -

'extremely bad'

yipyirtik (10) yimyirtik (4) yisyirtik (3) -

'completely torn; negatively bold'

The above examples, though not entirely representative, show there is a great deal of variability in the choice of LE's. There is also a tendency toward a certain regularity of choice depending on several phonological features of consonants in a given stem. Speakers, however, are aware of the different competing forms, as most of the subjects pointed out that it does not bother them to hear gepgevšek', gemgevšek' or gesgevšek' 'very loose'. Some go even further in their reasoning for the different augmented forms of the same stem saying that they have different contexts for certain different reduplicated forms. For example, they would never use kapkati 'very thick; stiff' in a sentece like cojuk kapkati oldu 'The child became stiff'. For them kapkati and kaskati have different colligations as it is illustrated below:

- 1. ilaji alir almaz, čojuk kaskati oldu
- 'As soon as he took the medicine, the child became stiff.
- 2. kapkati bir corba olmuš

'The soup has turned out to be very thick.'

So in at least some cases different augmented forms of the same stem have gained specialized meanings, but this does not account for the forms that are used interchangeably.  $^{2}$ 

In the strings of the segments within a stem, in spite of all the irregularities described above, the striking thing is that the subjects never used some certain forms. These have provided a considerable clue about the nature of the formation. For instance, while some had the form dapdalgin 'pensive' and others had dasdalgin, nobody ever uttered \*dardalgin or \*damdalgin. With respect to the impossible strings of segments that came about with LE's attached, adjectives and adverbs fall into several subclasses according to what LE(s) is/are possible with them. Observe the following:

	– p –	- m -	- s -	-r-
1.		bembejerik'l'i	(3) besbejerik'l'i	(7) -
		'very adroit'		
2.	18	bemberek'etl'i	(2) besberek'et1'i	(4) -
		'very fertile'		
3.	-	bembeter (1)	besbeter (19)	-
		'extremely bad'		
4.	1-	bombo1 (6)	bosbol (12)	-
		'extremely abun	dant'	
5.	~	bümbütün (1)	büsbütün (25)	-
		'very complete'		
6.	-	pamparlak (1)	pasparlak (18)	7
		'extremely shin	у '	.6
7.	-	bomboš (29)	-	-
		'very empty'		
8.	-1		pespembe (24)	2-
			'very pink'	

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9. dopdogru (6) - -
                              dosdogru (26)
     'straight'
  10. dopdolu (30)
                             dosdolu (1)
      'very full'
  11. kapkaranlik (29) - kaskaranlik (1)
      'very dark'
  13. yapyarim (5)

    yasyarim (7)

      'half'
  13. sapsağir (13)
     'deaf'
  14. sapsağlam (27) -
      'as healthy as it could be'
  15. -
                                         čarčabnk (29)
                                         'very hastily'
  16. -
                                         tertemiz (22)
                                         'very clean'
                                         sersefil (23)
  17. -
                                       'very destitude'
 18. čipčiplak (1) -
                                         čirčiplak (25)
'completely naked'
 19. sipsijak (13) simsijak (19) -
     'warm'
 20. yüpyük'sek'(7) yümyük'sek' (5) -
     'very high'
 21. tepters (7) temters (15) -
     'extremely ill-tempered'
```

## 22. čepčevik'(5) čemčevik'(2) česčevik'(2) čerčevik'(2) 'very swift'

It is crucial to notice that the choice of the LE is based solely on how dissimilar it is to the following consonants. Conditioning factors include primarily the first two consonants of the stem although all seem to have some bearing on the selected LE. Let us now look closely at the consonants in the stems which present the highest frequency load for a particular LE. Observe the following determining environments for the LE -p-:

Angmented Form	Number of the	Speakers	Gloss		LE	Consonants in Stems
ðöpðärök'	17		rotten		- p -	è-r-k'
dapdar	29		tight		- p -	d-r
dondolu	3.0		fu11		- p -	d-1-
g'epg'enA	2.4		young		- p -	g'-n&
g'-ng'-niš	2.1		wide		- p -	g'-n-;
g' npg' n1' nn	è 16		funny		- q -	g'-1'-nċ
g'npg'nr	17		thick		- p -	g'-r
japjan1:	26		lively		- p -	j-n1-
Janjansiz	3.2		with no	life	- p -	<b>j</b> - n s - z
kapkalin	25		thick		-p-	k-1-n
kapkara	27		black		- p -	k-r-
kapkaranlik	29		dark		-p-	k-r-n1-k
k'=nk'esk'i	n 16	•	sharp		- p -	k'-sk'-n
$k\notin p,k\notin r,m\notin z\notin$	2 3		red		- p -	k - r m - z -
kipkizgin	19		angry		-p-	k - z g - n
k + n k + 7 + 1	3.2		crimson		-p-	k-z-1
konkoyo	24		dark		- p -	k - y -

sapsağlam	27	healthy	-p-	s-g1-m
sapsari.	2 3	yellow	-p-	s-r-
sipsivri	26	sharp	- p -	s-vr-
sopsolgun	18	faded	-p-	s-lg-n
supsulu	19	watery	- p -	s-1-
taptat1±	17	sweet	-p-	t - t 1 -
taptaze	3 0	fresh	- p -	t - z -
yapyalniz	2 5	lonely	- p -	<b>y</b> - 1 n - z
zapzayif	19	skinny	- p -	z - y - f

As it is observed in the above list, the consonants in the stems exhibit an unnatural class. What is excluded among them, however, is any segment that shares the point of articulation with the LE -p-. The following rule accounts for the forms with -p- above:

The above rule states that the LE -p- appears in a duplicated form if the consonants in stem have the feature [-lab].

In order to establish a phonetic environment for the LE -s-, the following reduplicated forms with the highest frequency load need to be examined:

Augmented	Number		Gloss	LE	Consonants
Form	of the	Speakers			in Stems
besbeter	19	•	worst	- s -	b-t-r
büsbütün	25		completely	-s-	<b>b-t-</b> n
dosdoğru	26		straight	- g -	d-gr-
kaskati	22		stiff	- s -	k - t -
koskočaman	25		big	-s-	k-e-m-n

masmavi	23	blue	-s-	$M - \Delta -$
mosmor .	2 3	purple	-g-	m-r
pasparlak	18	shiny	-s-	p-r1-k
pespembe	2 4	pink	-s-	p - m b -
tastamam	28	complete	-g-	t-m-m
tostoparlak	29	round	-g-	t-p-r1-k
ynsynvarlak	29	round	-s-	y-v-r1-k

The above list also presents a set of heterogeneous classes of segments which exclude only one class with the feature [+sibilant]. A rule formulated such as the following will correctly derive the forms in the list above:

The above rule allows -s- as a LE in the above data only if the first stem consonant has the feature [-sibilant].

The following forms represent the environments where the LE -m- appears:

Angmented Form	Number of the Speakers	Gloss	LE	Consonants in Stems
bembeyaz	2.4	white	- m -	b-y-z
bombok	2 5	excrement	- m -	b - k
bomboš	2.9	empty	- m -	P - ₹
bomboznk	19	defective	- m -	b-z-k
dimdik	25	straight	- m -	d - k
d find 02	26	smooth	- m -	d - z
simsiyah	19	black	- m -	s-y-h
simsijak	29	hot	- m -	s - j - k
simsiki	19	tight	- m -	s-k-

yamyass±	25	flat	- m -	Y-88-
Yamyaš	2 9	wet	- m -	. y - ¥
yemyeşil'	30	green	- m -	y-5-1'

The above environments lead to the following rule:

These rules account for the LE of the majority of Turkish reduplications encountered so far. There are forms, however, which do not meet the structural descriptions of any of the rules formulated above. The consonants occurring in them preclude the appearance of the LE's, -p-, -s-, and -m-. These remaining cases, members of a very small class, accept -r- as the LE in their reduplicated forms given as the following:

Angmented Form	Number of the Speakers	Gloss	LE	Consonants in Stems
čarčabuk	29	quicly	-r-	&-b-k
čirčiplak	25	nude	-r-	è-p1-k
sersefil'	2 3	miserable	-r-	s-f-1
tertemiz	2 2	clean	-r-	t-m-z

The four stems above do not have other forms except sefil 'miserable', which only one subject out of 32 used with the LE -p-. The rest were constructed with only -r-because the consonants in the stems are less similar to -r- than any of the rest of the three LE's. One might question why the stem sifak 'hot' does not take -r- but -p- or -m-. How does sifak differ from sefil', with a frequency of 23? The segment f in sifak blocks -r- whereas -f- in sefil' favors it due to the point of articulation the former but not the latter shares with -r-. The rule for this small class is as follows:

Upon close examination of the data given in Appendix A, it becomes clear that forms with initial vowels permit only the LE -p- except for ufak 'small', which will be discussed later. Therefore, the LE -p- has the widest range of occurrence. This fact also strengthens the assumption of a dissimilarity condition on the choice of the LE, for the fact that only -p- among the four LE's seems to be the most dissimilar to vowels from both articulatory and acoustic points of view.

Concerning the range of the application of the rules for other LE's, the forms that permit -s- as the LE constitute the next largest class after the one with -p- Then comes -m- followed by -r-, which seems to be the least preferable LE.

These facts suggest a possible hierarchy in the usage of the LE's, giving the unmarked status to -p-followed by -s-, -m-, and -r- in that order. This assumption is strengthened by the fact that the consonants in devik' must be viewed quite equally different to any of the four LE's since all four forms can be seen as possible forms although only one of the rules postulated above predicts the LE -r- to appear in this stem. In spite of this fact the functional load of depdevik', with -p- as the LE, illustrated as the following, is greater than the rest of the forms:

Items with varying forms like cevik' above seem to support the assumption of an unmarked status of the LE -p-.

In spite of the unmarked status of the LE -p- in usage, the less identical the inserted LE with respect to the following consonants the more preferable it is as the functional load in parenthesis indicate. For instance besbeter 'very bad', which 19 subjects prefered in their usage, established itself as the principle form over the form bembeter (used by only one person). A question may arise as to why some speakers chose the

less dissimilar LE while a more dissimilar alternative is avaiable for them, for instance in the case of pamparlak (1) instead of pasparlak (18).

The following list examplifies the rather puzzling varying usage of the LE's:

-p- -s- -m- -r-

čapčarpik (2) časčarpik (4)

'crooked'

čepčevik (5) česčevik (2) čemčevik (2) čerčevik (2)

'swift'

dapdalgin (10) dasdalgin (2)

'pensive'

depdegersiz (4) desdegersiz (1)

'wothless'

denderin (25) desderin (1)

'deep'

dopdolu (30) dosdolu (1)

'full'

dopdogru (6) dosdogru (26)

'straight'

gepgeč (6) gesgeč(1) gemgeč(4)

'late'

gepgevšek (8) gesgevšek (2) gemgevšek (2)

'loose'

gipgiri (10) gisgiri (1)

'gray'

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göpgöbük (9) gösgöbük (3)
      'fallen down'
 göpgölgeli (1) gösgölgeli (2)
     'shady'
 güpgülünd (16) güsgülünd (1)
      'hilarious'
güpgüneşli (9) güsgüneşli (2) gümgüneşli (1)
     'sunny'
güpgüzel (15) güsgüzel (4) gümgüzel (1)
     'pretty'
japjazip (1) jasjazip (1)
     'attractive'
kapkaranlik (29) kaskaranlik (1)
     'black'
k'apk'arl = (13) k'ask'arl = (1)
    'showy'
kapkat: (7) kaskat: (22)
    'stiff'
kapkavruk (4) kaskavruk (10)
    'scorched'
kipkinli (1) kiskinli (1)
    'vindictive'
kipkirmizi (23) kiskirmizi (1)
    'red'
k \pm p k \pm z \pm 1 (22) k \pm s k \pm z \pm 1 (1)
    'red'
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kopkojaman (2) koskojaman (25)
     'big'
kopkolay (13) koskolay (10)
     'easy'
kopkorkak (1) koskorkak (3) komkorkak (1)
     'coward'
kopkorkunč (14) koskorkunč (1)
     'terrible'
kopkoyu (24) koskoyu (7)
     'dark'
k'öpk'ötü (8) k'ösk'ötü (9) k'ömk'ötü (1)
    'bad'
kupkuduruk (6) kuskuduruk (4) kumkuduruk (1)
     'wild'
kupkuvvetli (2) kuskuvvetli (3)
     'strong'
k'@pk'@&@k' (10) k'@sk'@&@k' (6) k'@mk'@&@k' (5)
    'small'
napharin (11) nasharin (2)
    'delicate'
napnazik' (6) nasnagik' (1)
    'agreeable'
nepnešel'i (3) nesnešel'i (1)
    'cheerful'
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nupnurlu (7) nusnurlu (1) 'limunous' upufak (6) usufak (2) 'tiny' yapyakin (11) yasyakin (6) 'near' yapyamuk (2) yasyamuk (11) yamyamuk (2) 'flat' yapyarik (4) yasyarik (1) 'split' yapyarim (5) yasyarim (7) 'yarim' yapyašli (13) yasyašli (1) yamyašli (1) 'old' yipyirtik (10) yisyirtik (3) yimyirtik (1) 'torn' yopyorgun (8) yosyorgun (10) 'tired' yupyumušak (5) yusyumušak (7) yumyumušak (7) 'soft'

In the case of some variations between a form with a high frequency load and the one with a very low frequency load, i.e., dopdolu (30) 'very full' and dosdolu (1), the exception may be regarded as a mistake. Related to this assumption, one of the subjects remarked that if a context were provided, the most common form would emerge. Otherwise, the way the subjects were providing a form would be in a mechanical fashion with no real usage overtones. In other cases, such as kopkolay (13), koskolay (10) and k'üpk'ücük' (10), k'üsk'ücük' (6), k'ümk'ücük' (5), some admitted that they were not quite

sure which one they would use, pointing out that all would seem to be fine. Hesitations of this kind may be due to the fact that the LE's in question have almost the same dissimilative degree with respect to the consonants in the stem. For instance, in  $k'\ddot{o}pk'\ddot{o}t\ddot{u}$  (8),  $k'\ddot{o}sk'\ddot{o}t\ddot{u}$  (9), and  $k'\ddot{o}mk'\ddot{o}t\ddot{u}$  (1) the distinctive features of each LE as opposed to the consonants of the stem are as follows:

		LE's		Stem	Cons
Syllabic	/p/	/s/ -	/m/ -	/k/ -	/t/ -
Consonantal	+	+	+	+	+
Sonorant	-	-	+	-	-
Nasal	-	-	+	-	-
High	-	-	-	+	-
Back	_	-	H	+	-
Low	-	1-	-	-	-
Anterior	+	+	+	-	+
Coronal	-	+	-	-	+
Voiced	-	-	+	_	-
Continuant	-	+	9 <del>-</del> 0	-	-
Lateral	e-	-	1.	-	-
Sibilant	-	+	-	-	-

As the above illustrates, -p- is more dissimilar to /t/ than is /s/ in terms of place of articulation whereas /s/ is more dissimilar to /t/ than -p- in terms of manner of articulation. When the /k/ in k'ötü is taken into consideration, /s/ seems to be the best choice since manner of articulation makes /s/ more dissimilative to all consonants in the stem than /p/ would be. To a certain extent it is not clear which scales the speakers are employing for their dissimilative processes. It may be possible that when minute contrasts are involved, it does not make much difference which way they go. The lexical item ufak 'small' with the forms upufak (6) and usufak (2), for instance, supports this assumption since

it shows that although -p- is the most dissimilar segment among the LE's, if the item has an initial vowel, some speakers may still unconsciously consider other facts also to establish the most striking dissimilation. Therefore, for some speakers, apparently, -f- in ufak makes -p- a poor candidate for a LE, and their choice may become -s- in spite of a general tendency that -p- is the LE when the initial segment in a stem is a vowel. Given the indeterminate nature of the strings of consonants in stems in a lexicon, to formulate rules that can account the process in every word seems to be difficult.

The following are the variations on the usage of -p- and -m- where -s- is exluded:

- p -	- m -	gloss
dipdik (1)	dimdik (25)	straight
güpgüê (2)	gümgüč (4)	difficult
güpgür (17)	gümgür (2)	thick
sapsaf (1)	samsaf (1)	naive
sapsalak (6)	samsalak (1)	stupid
sapsarkik (7)	samsarkik (1)	hanging
sapsarp (1)	samsarp (3)	steep
sensert (4)	semsert (16)	hard
sepsessiz (10)	semsessiz (4)	quiet
sipsikiči (3)	simsikiči (1)	dull
sopsolak (1)	somsolak (1)	left handed
sopsoğuk (16)	somsoguk (2)	cold
sopsoyut (1)	somsoyut (1)	abstract
säpsäktäkt (3)	sőmsők'ük' (4)	torn
supsusuz (11)	sumsusuz (1)	waterless
šapšašė (3)	šamšaši (1)	squint eyed
<pre>%ep%ek'erl'i (9)</pre>	šemšek'erl'i (1)	sweet

	* *	
taptatsiz (15)	tamtats źz (1)	tasteless
taptaze (30)	tamtaze (2)	fresh
tepters (2)	temters (15)	ill-tempered
tiptitiz (4)	timtitiz (1)	peevish
tiptiz (1)	timtiz (5)	high pitched
tuptuzlu (15)	tumtuzlu (4)	salty
yapyağ iz (5)	yamyağiz (1)	dark-skinned man
yanyassi (4)	yamyassi (24)	flat
yepyešil' (2)	yemyešil' (30)	green
y i p y i k i k (2)	y ± m y ± k ± k (5)	fallen down
yüpyük'sek' (7)	yümyük'sek' (5)	high
zipzit (5)	z ± m z ± t (6)	opposite
The followin	g are the variations be	etween -s- and

-m- where -p- is exluded:

besbederik'l'i	(7) bembejerik'l'i	(3) skillful
besherek'etl'i	(4) bemberek'etl'i	(2) fertile
besbeter (19)	bembeter (1)	bad
bombol (12)	bosbol (6)	abundant
büshütün (25)	bümbütün (1)	complete
časčarpik (4)	čamčarpik (2)	crooked
koskopuk (4)	komkopuk (1)	broken
paspak (3)	pampak (3)	clean
pasparlak (18)	pamparlak (4)	shinny
tastamam (28)	tamtamam (1)	complete
yasyamuk (11)	yamyamuk (2)	uneven
yusynvarlak (29	) yumyuvarlak (1)	round

The following are the variations between -p- and -r- where -s- and -m- are exluded:

sepsefil (1) sersefil (23) miserable

sapsakat (1) sarsakat (1) disabled

For each variation above, arguments in favor of the LE with the highest frequency load can be presented. Yet some choices on a LE may beg questions about the dissimilative process. Concerning some variations that seem to weaken the assumption of a dissimilative process, it is quite possible to think that some different data could have been elicited had the subjects been prowided with possible contexts for the augmented forms. There were about 300 items that the speakers were required to deal with, which took about 45 minutes to complete. Therefore, the occurrence of so many variations may be thought partly to be the result of a mechanistic manner employed in the production of the forms. The investigation, however, seems to have revealed that a certain reduplication in Turkish is a dissimilative process of a certain LE with respect to the consonant segments in the stem.

### NOTES

- 1. There are several other types one of which is closely related to the case under investigation, which is considered to exhibit "more complex reduplicative patterns" (Swift 1961:124). A possible explanation for these irregular augmented forms with the insersion of the same extra phonemic segnents, -p-, -m-, and -r-, will not be dealt within this paper.
- 2. It seems to be obvious that the augmented form kaskati has assumed a different semantic content.

  Moreover, there are some augmented forms whose stems are obsolete. For instance, the form tamtakir 'nothing left' is the only one in use whereas the morpheme takir has no meaning, and is never used.
- 3. In spite of the general pattern of dissimilation that the data revealed, there are few items that appear to be inconsistent with this fact. For example

ynmušak 'soft' is one of them with a considerable frequency load. Seven speakers out of 32 prefered yumušak with the LE -m- in the duplicated form of this item. Further research may reveal if there is an independent principle that sometimes seems to override the general pattern of duplication.

### REFERENCES

Marantz, Alec. 1982. Re Reduplication. Linguistic Inquiry. 13:435-82.

Swift, Llotd B. 1961. A Reference Grammar of Modern Turkish. Bloomington. Indiana University Publications.

### APPENDIX A

-p-				
stem		nber respondents	varying	forms
ahl'aksiz	immoral	1		
ahmak	stupid	5		
ağ≑r	heavy	18		
ak	white	19		
akilsiz	stupid	11		
aksi	disagreeable	12		
ajel'e	quick	10		
aj ŝ	ηφt	13		

al'evl'i	flaming	1			
alik	stupid	6		**	
alingan	sensitive	6			
aljak	1 o w	11			
amaës i z	aimless	1			
ani	sudden	7			
aniden	suddenly	6			
anlamsiz	meaningless	10			
anlay i šli	understanding	4	2		
anormal'	abnormal	5			
antika	antique	1			
aptal	stupid	2			
arizali	defective	3			
arzulu	willing	1			
a₹ik	in love	10			
ateĭl'i	ardent	1			
aydinlik	bright	26			
ayn i	same	21			
azg in	furious	17			
ċali∛kan	hard-working	4			
čarpik	crooked	2	cas- 4	čam− 2	2,75
ček'imser	abstainer	2			
čevik'	swift	5	čes- 2	čem− 2	čer- 2
čevre	surrounding	8			
čiplak	nude	1			

čorok'	rotten		ċūs− 2	èüm 2
jambaz	acrobat	1		
jan 1 ±	alive	26		
jans iz	lifeless	22		
jazip	attractive	1	jas- 1	
dalgin	pensive	10	das- 2	
dar	narrow	29		
değersiz	worthless	4	des- 1	
derin	deep	25	des- 1	
dik'	steep	1	dim- 25	
dil'siz	mute	1		
diri	alive	27		
doğru	straight	6	dos- 26	
dolu	full	30	dos- 1	
dostča	friendly	1		
durn	clear	7		
dnygusuz	insensitive	1		
döröst	honest	10		
d ü z	straight	5	d üm - 26	
ek'il'i	planted	2		
ek'sik'	lacking	7		
ek'ši	sour	19		
el'verišl'	i useful	3		
ender	rare	1		
endi×el'i	worried	3		
erdeml'i	virtuous	1		

erg'in	mature	6		
esk'i	old	21		. *
evvel'	before	1		
eyik'	oblique	12		
eyl'enhel	'i amusing	1		E.
eyri	crooked	29		
ezil'mi;	smashed	3		
ezik'	smashed	26		
g'eð	late	6	g'es- 1	g'em- 4
g'enč	Young	24		
g'eniš	wide	21		
g'erg'in	taut	8		
g'evšek'	loose	8	g'es- 3	g'em- 4
gʻri	grey	10	gis- 1	
g'őðűk'	fallen down	9	g'ös- 3	
g'ől'g'el'	i shadowy	1	g'ös- 2	
d, 04	difficult	2	g'üm- 4	
g'081'0	strong	14		
g' 01' 0n &	ridiculous	16	g'üs- 1	
g'ündüz	day time	8		
g'ünešl'i	sunny	9	g'üs- 2	g'üm- 1
g'ür "	thick	17	g'üm- 2	
g'üzel'	nice	15	g'üs- 4	g'üm- 1
hassas	sensitive	6		
hasta	i <u>1 1</u>	2		

hašin	harsh	2	
haylaz	idle	5	
heyetanli	excited	2	
hiddetl'i	angry	1 .	
hissiz	callous	8	
hoż	pleasant	6	
hudutsuz	limitless	1	
huysuz	ill-tempered	13	
h@nerl'i	adroit	2	
ik'iz	twin	1	
inje	thin	31	
insafsiz	pitiless	2	
iri	big	29	
istek'l'i	willing	5	
ištahl£	having appeti	te 4	
iyi	fine	6	
41 4 k	lukewarm	25	
<u>islak</u>	wet	26	
kalin	thick	25	kas- 4
kahvereng'i	brown	2	
kara	black	27	kas- 3
karanlik	dark	29	kas- 1
karli.	snowy	6	
k'arli	profitable	13	k'as- 1
karši	opposite	7	
kat £	hard	7	kas- 22

kavruk	scorcted	4	kas- 10
kay i p	lost	1	g = 45
k'esik'	cut	4	
k'esk'in	sharp	16	
k'inl'i	vindictive	1	k'is- 1
$\mathbf{k} \stackrel{!}{=} \mathbf{r} \; \mathbf{m} \stackrel{!}{=} \mathbf{z} \stackrel{!}{=}$	red	23	k ± s - 1
k i zg i n	angry	19	
k ½ z ½ 1	crimson	22	k is - 1
kojaman	big	2	kos- 25
kolay	easy	13	kos- 10
korkak	cowardly	1	kos-3 kom-1
korkulu	frightening	3	
korkunč	terrible	14	kos- 1
koyu	dark	24	kos- 7
k'5t0	bad	8	k'ös- 9 k'öm- 1
kuduruk	wild	6	kus- 4 kum- 1
kuralsiz	irregular	1	
kuru	dry	22	
kurumuš	dried up	1	
ku škulu	nervous	1	
kutsa1	sacred'	1	
kuvvet1'i	strong	2	kus- 3
k'080k'	tiny	10	k'0s-6 k'0m-5
narin	delicate	11	nas- 2
nazik'	agreeable	6	nas-1

nazli	coquetish	8	
nešel'i	cheerful	3	nes- 1
nurlu	limunous	7	nus- 1
olas i	possible	1	
olumlu	possitive	4	
olumsuz	negative	1	
olgun	mature	2	
öfk'el'i	choleric	1	
öl'g'ün	faded	11	
ðl'ü	lifeless	11	
önde	ahead	7	
özg'ön	original	5	
8 <b>z1'</b> 0	sticky	8	
renk'l'i	colorful	8	
sabirli	patient	1	
sabunlu	soapy	1	
saf	naive	1	sam- 1
sağir	deaf	13	
sağlam	healthy	27	
sakat	disabled	1	sar- 1
salak	stupid	6	sam- 1
sari	yellow	23	
sarkik'	hanging	7	
sarp	steep	1	sam- 3
sefil'	miserable	1	ser- 23
sert	hard	4	sem- 16

sesl'i	having voice	5	
sessiz	quiet	10	sem- 4
sevejen	compassionat	e 2	
seviml'i	appealing	5	
sevinčl'i	joyful	1	
sinirl'i	nervous	8	
siyah	black	1	
sijak	hot	13	s ± m - 19
s ± k ±	tight	4	sim- 19
s ½ k ½ j ½	boring	3	s ± m - 1
sikintili	dull	4	
sivri	sharp-pointed	1 26	
soğuk	cold	16	som- 2
sokulgan	sociable	1	
solak	left-handed	1	som- 1
solgun	faded	18	
somut	concrete	1	
soynt	abstract	1	som- 1
sők'űk'	ripped open	3	söm- 4
sulu	watery	19	
susamiš	thirsty	1	(C) 8
susuz	waterless	11	sum- 1
süsl'ü	ornamented	4	
s özg 'ön	weak	11	
Xa X ≟	squint-eyed	3	šam- 1

šahane	magnificient	7	
	confused	12	
šek'erl'i		9	šem- 1
širin	affable	8	
šišman	fat	9	
š u h	coquetish	1	
tašl <u>÷</u>	stony	5	tam- 1
tat1:	sweet	17	
tatsiz	tasteless	15	tam- 1
taze	fresh	30	tam-2
ters	ill-tempered	7	tem- 15
titiz	peevish	4	tim- 1
tiz	high-pitched	1	tim- 5
turunju	orange	1	
tuzlu	dusty	15	tum- 4
ufak	tiny	6	us- 2
ulu	great	14	
แรใน	good-natured	25	
uğurlu	auspicious	7	
uğursuz	inauspicious	4	
ոչնոս	suitable	14	
uygunsuz	inappropriate	6	
uysal ~	conciliatory	7	
uyumlu	harmonious	1	
uyumsuz	discordant	6	
uzak	a long way	25	

uzun	long	28		
ün1'ü	well-known	10		(b)
0t 01'0	ironed	1		
üzg'ün	sad	17		
0z0nt01'0	sad	2		
yağ≟z	dark-skinned	(man)	5 yam-	1
yakin	near	11	yas- 6	
yaldizli	gilt	6		
yalniz	alone	25		
yamuk	eneven	2	yas- 11	yam- 2
yarik	split	4	yas- 1	
yarim	half	5	yas- 7	
yass ±	flat	4	yam- 25	
ya Kli	elderly	13	yas- 1	yam- 1
yešil'	green	2	yem- 30	
y ± k ± k	demolished	2	y ± m - 5	
yirtik	torn	10	y ± s - 3	y ± m - 1
yolsuz	with no road:	s 4		
yorgun	tired	8	yos- 10	
yosunlu	mossy	3		
ynmušak	soft	5	yus- 7	yum- 7
yük'sek'	high	7	yüm- 5	
y 0 n 1 ' 0	woolen	1		
zayif	thin	19		
zek'i	intelligent	5		

zeng'in	wealthy	11			
z≟t	opposite	5	z ± m - 6		
- s -				U:	
stem	gloss		r spondents	varyi	ng forms
babajan	good-nature	d 3		02	
bejerik'l'	i skillfull	7	bem- 3		
bel'1'i	obvious	8			
benjil'	selfish	4			
berek'etl'	i fertile	4	bem- 2		
beter	worse	19	bem- 1		
bol	abundant	12	bom- 6		
boylu	tall	12			
bö1'@k'	in bits	8			
bunak	imbecile	10			
bunam ± 3	imbecile	2			
bût ûn	whole	25	büm- 1		
b 0 y 0 k '	big	8			
čabnk	quick	2	čar- 29		
čarpik	crooked	4	cap- 2	cam-2	
čevik'	swift	2	сер- 5	čem- 2	čer- 2
ðür ük '	rotten	2	ĉüp− 17	& üm− 3	a <sup>re</sup>
jazip .	attractive	1	jap- 1		
dalgin	pensive	2	dap- 10		
darilmiš	offended	1			
değersiz	worhtless	1	dep- 4		

			•0
derin	deep	1	dep- 25
dipsiz	bottomless	1	
doğru	straight	26	dop- 6
dolu	full	1	dop- 30
düşk'ün	fallen on ha	rd ti	mes 1
fakir	poor	6	
gaddar	cruel	3	
g'eð	late	1	g'ep- 6 g'em- 4
g'evrek'	tender	5	
g'e⊽∜⊬k'	loose	3	
gir i	grey	1	g ½ p - 10
g ' 50 ük '	caved in	3	g'öp- 9
g'81'g'el'	i shadowy	2	g'öp- 1
g'01'0nð	ridiculous	1	g'öp- 16
g'ünešl'i	sunny	2	g'öp- 9 g'öm- 1
g'üzel'	nice	4	g'öp- 15 g'öm- 1
kaba	crude	8	
kalin	thick	4	kap- 25
kara	black	3	kap- 27
karanlik	dark	1	kap- 29
k'arli	profitable	1	k'ap- 13
kat £	stiff	22	kap- 7
kavruk	roasted	10	kap- 4
k'inl'i	vindictive	1	k'ip- 1
k ± r m ± z ±	red	1	k ± p - 23
k i z i l	crimson	1	k ± p - 22

kojaman	big	25	kop- 2	
kolay	easy	10	kop- 13	2
ropuk	broken off	4	kom-1	
rorkak	cowardly	3	kop- 1	kom- 1
corkund	fearfull	1	kop- 14	
1.70	dark	7	kop- 24	
1.110	Med∏	9	k'öp- 8	k'öm- 1
radorak	furious	4	kup- 6	kum - 1
r - n 7 .1	sandy	2		
i ryetl'i	strong	3	kup- 2	
k 'x !! K .	small	6	k üp- 10	k üm - 5
" * C * % * Z	meaningless	2		
He say	blue	23		
ni e	purple	23		
n. e. a	slim	2	nap- 11	
1122.71	kind	1	nap-6	
h. '+: 'i	cheerful	1	nep-3	
nov. g	luminous	1	nup- 7	
per	pure	3	pam-3	
Dariak	shining	18	pam-1	
bri.	. i t m	1		
Dea: "	Pink	24		
21: -1.1	with pleats	1		
2:11:14	Practical	1		
" 4 H e 4	:Smplete	28	tam-1	

tombul.	plump	8			
toparlak	round	29		20 W	
tuhaf	queer	4			
ufak	small	2	up- 6		
vahši	wild	1			
yak≟n	near	6	yap- 11	,	
yamuk	uneven	11	yap- 2	yam - 2	
yapiškan	adhesive	1			
yarik	cracted	1	yap-4		
yarim	half	7	yap- 5		
ya ₹1 ±	elderly	1	yap- 13	yam- 1	
y≟rt≟k	torn	3	y ± p - 10	y ± m − 1	
yobaz	bigot	2			
yorgun	tired	10	yop- 8		
yumu šak	soft	7	yup- 5	yum- 7	
ynvarlak	round	29	yum- 1		
- m -					
stem	gloss	numbe of re	r spondents	varying forms	
baška	different	7			
bejerik'l'i	skilful	3	bes- 7	9	
bež	beige	3		6	
berek'etl'i	fertile	2	bes- 4		
beter	worse	1	bes- 19		
beyaz	white	24			
bitišik'	contiguous	4			

bok	excrement	25		
bol	abundant	6	bos- 12	
boš	empty	29	**************************************	
bozuk	defective	19		
burušuk	wrinkled	8		
b 0 t 0 n	whole	1	büs- 25	
darpik	crosswise	2	cap- 2 cas- 4	
čevik'	swift	2	cep-5 ces- 2	čer- 2
torok'	rotten	2	čüp- 17 čüs- 2	
dik'	upright	25	dip- 1	
düz	straight	26	d 0p- 5	
gʻeð	late	4	g'ep- 6 g'es- 1	
g'evšek'	loose	4	g'ep- 8 g'es- 3	
g'ők'	green/blue	10		
g ' 08	hard	4	g'üp- 2	
g'önešl'i	sunny	1	g'üp- 9 g'üs- 2	
g'ür	abundant	2	g'üp- 17	
g'üzel'	nice	1	g'üp- 15 g'üs- 4	
kopuk	broken off	1	kos- 4	
korkak	cowardly	1	kop- 1 kos- 3	
k'őtű	mean	1	k'öp- 8 k'ös- 9	
kuduruk	furious	1	kup- 6 kus- 9	
k'080k'	small	5	k'üp- 10 k'üs- 6	
misk'in	poor-spirite	ed 1		
pak	clean	3	pas- 3	
parlak	bright	1	pas- 18	

pasli	rusty	1	
puslu	misty	4	
pürüzsüz	smooth	2	
saf	naivė	1	sap- 1
salak	stupid	1	sap- 6
sarkik	pendulous	1	
sarp	steep	3	sap-1
sert	hard	16	sep- 4
sessiz	quiet	4	sep- 10
sijak	hot	19	sip- 13
s i k i	tight	19	s i p - 4
sikiji	boring	1	s ± p - 3
sinirli	nervous	1	
siyah	black	27	
soğuk	cold	2	sop- 16
solak	left-handed	1	sop- 1
soyut	abstract	1	sop- 1
sāk'āk'	unstitched	4	söp- 3
susuz	waterless	1	sup- 11
¥a¥±	cross-eyed	1	šap- 3
šek'erl'i	sweet	1	¥ep− 9
tamam :	complete	1	tas- 28
taĭli	stony	1	tap- 5
tatsiz	tasteless	1	tap- 15
taze	fresh	2	tap- 30

ters	peevish	15	tep- 7
titiz	fastidious	1	tip- 4
tiz	sharp (of vo	ice) 5	
tuzlu	salty	4	tup- 15
yağ≟z	dark skinned	(man)	1 yap- 5
yamuk	uneven	2	yap- 2 yas- 11
yassi:	flat	25	yap- 4
γаξ	wet	29	
yašl <u>i</u>	elderly	1	yap- 13 yas- 1
yeşil'	green	30	yep- 2
$y \stackrel{\cdot}{\leftarrow} k \stackrel{\cdot}{\leftarrow} k$	demolished	5	y ± p − 2
yirtik	torn	1	y ± p - 10 y ± s - 3
yumušak	soft	7	yup- 5 yus- 7
ynvarlak	round	1	yus- 29
yük'sek'	high	5	yüp- 7
z ≟ t	opposite	6	z ± p - 5
- r -			
stem	gloss	number of re	r varying forms spondents
čabuk	guick	29	ċas- 2
čapraz	crosswise	1	
čevik'	swift	2	cep- 5 ces- 2 cem- 2
čiplak.	naked	25	è±p- 1
sakat	disabled	1	sap- 1
sefil'	miserable	23	sep- 1
temiz	clean	22	

### APPENDIX B

The following are the adjectives for which reduplicated forms were not generated in the elicitation conducted to obtain the data:

ahl'akdiši

immoral

anaršik'

anarchistic

antiseptik'

antiseptic

bassiz

leaderless

besl'eyiji

nutritious

bil'imsel'

scientific

dapkin

dissolute

debšetl'i

dreadful

dostane

friendly

efl'atun

lilac-color

evvel'je

before

farksiz

indistinguishable

fedak'ar

self-sacrificing

fersiz

without rediant

hünerl'i

talented

il'k'

first

il'tihapli

inflamed

mantiksiz

illogical

misk'in

wretched

muhtešem

magnificent

mukaddes

sacred

müstesna

extraordinary