ON SOME ALLOPHONES OF TURKISH /F/ AND /V/ PHONEMES(1)

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00 : Introduction

Needless to say, speech sounds are the building blocks of languages, and it is by speech sounds that we human beings communicate. Due to internal and external developments, languages start to change primarily in their phonological structure, and then comes the morphological change caused by phonological changes. The phonological nature of a language is the weakest point in starting to get changed in time and through time.

1.00 Phonetics and speech sounds.

Phonetics discovers identifies, names, and classes the speech sounds which are phonated by muscular energy. That is why it is said that «all of the sounds we make when we speak are the results of muscles contracting»((1). The activity of muscles used in speech can be responsible for the creation of new allophones, and therefore it is a commonly accepted fact that language change starts out in forms of allophones first.

Speech sounds sharing common points, places, and manners of articulations get assimilated to each other easily, and the result of this assimilation is a new allophone in many cases. For instance, Turkish fricative phonemes /f,v/ get assimilated to the place of articulation of/m, p, b/. The physiological background of

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(1) Peter Roach, **English Phonetics and Phonology** (Cambridge University Press, 1984), p : 8.

the change realised here is a clear case of regressive and progressive consonantal assimilation in that /f, v/ are voiceless voiced labiodental fricatives which share with/m, p, b/ labialness. In other words, /m, p, b/ are bilabial sounds sharing with /f, v/ labialness Bilabial sounds are stronger than labials and therefore they produce a kind of magnetic attraction over them and the result is the assimilation of /f, v/ to /Φ, β/ owing to the articulatory influence of /m, p, b/. This change is a plausible phonetic change and is in accordance with the **Least Effort Theory** and **Zipf's Law.**

1.01 The Background of /f, v/ phonemes in Turkish

/f/ is a voiceless labio-dental fricative in Turkish and had not been a phonemic case in Old Turkish. That's why, it did not take place in the structure of words together with «/v/», (2) which is a voiced labiodental fricative. /f, v/, thus, developed via development of other phonemes like /b/ and /w/, as seen in the following words:

Old Turkish»(3)	**Modern Turkish**	**Glossary**
yuwga	yufka	a thin layer of dough
öwge	öfke	anger
bar	var	there is
birmek	virmek>vermek	to give
yawız	yavuz	grim

Later on, after the 9th-century with the beginning of conversion of Turks into Islamic religion, borrowed words from Arabic and Persian testified the existence of /f, v/ as phonemes, and their coversion to /Φ, β/ was made possible.

2.01. The allophones of /f/ in Turkish

/f/ acts differently when it meets /m, p, b/ in syllables and across the morpheme boundaries and therefore changes to [Φ] via either regressive or progressive assimilation :

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(2) Original Turkish words never start with /f, v, j, h/, but the echoic words are exceptional in this respect.

(3) Tahsin Banguoğlu, **Türkçenin Grameri** (İstanbul : 1974), p: 43.; Muharrem Ergin does no accept the existence of /w/ as a phoneme in Old Turkish, see **Orhon Abideleri** (İstanbul : 1984), 10. Baskı, s : 101-142.

şofben	[šoɸben]	hot-water boiler
pufböreği	[puɸböreji]	a type of pastry
eşofman	[ešoɸman]	sports clothing

The change of /f/ to [Φ] through regressive assimilation is a physiologically possible phonetic change, whose rule is formulated as follows :

$$/f/ \text{ ------} [\Phi] / \text{ ---- } (+) \begin{Bmatrix} m \\ b \\ p \end{Bmatrix}$$

This case of assimilation is so common that it is also seen in German **aufbau** [aw Φ baw] «structure, building»

aufbieten [a Φ biytan] «to announce»
Raufbold [raw Φ bold] «agressive»

Articulatorily speaking, /f/ is produced while the lower lip touches upper teeth when the airstream leaves the mouth, but in occuring before a rounded or bilabial segment the lower lip does not touch the upper teeth ridge owing to the bilabially oriented sounds like /m, p, b/, which exert a bilabial magnetic pull over /f/ and assimilate it to [Φ].

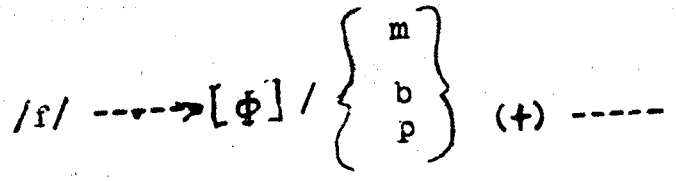
202. The progressive assimilation of /f/ to.

If the phoneme gets assimilated to [Φ] before rounded vowels or bilabial sounds, then it is quite natural to expect the reverse of this process to happen after rounded vowel and especially after bilabial consonants. The following examples represent this fact in Turkish:

hemfikir	[hemɸikir]	«sharing the same opinion»
şamfıstığı	[šamɸastıɣı]	«pistachio nut»
antepfıstığı	[antepɸıstıɣı]	«a type of pistachio»

(here we can assume that this assimilation also takes place before /b/, which is not a different phoneme then /m, p/ at all).

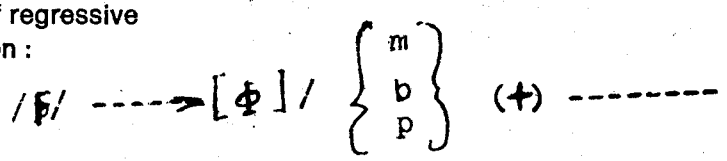
The processing of the change of /f/ to [Φ] is very much the same indicated in 2.01. That is, the case is, this time, progressive assimilation whose rule would be designed as follows,



The same type of assimilation exists in English as well :

subfamily	[sʌbΦamIlI]	nymph	[niymΦ]
clubfoot	[klʌbΦut]	triump	[trΦymΦ]
campfire	[kæmΦayr]	lympf	[liymΦ]
lawful	[lowΦUl]		

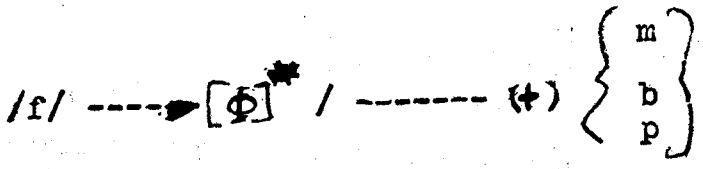
The rule of regressive assimilation :



The same rule is also applicable to the following German words:

pferd	[pΦerd]	«horse»
Kampf	[kamΦ]	«war»
abfall	[abΦfal]	«garbage»

It must be noted that the rule stated in 2.01 and 2.02 can be callapsed into a «neighborhood rule» (4) in the following manner :



(4) See Mehmet Demirezen, **«On Some New Hlophores of Turkish» I r, l, m, n/Phonemes»**, **ELT** 1985, Vol. 2. pp : 12 - 17.

3.01. The regressive assimilation of /v/ to.

/v/ is a voiced labio-dental fricative, and it has a partial similarity to [β] in place of articulation. [β] is a voiced bilabial fricative and therefore is stronger than /v/ in creating an articulatory pull over the homorganic fricative sounds. In this way /v/ is altered to [β] phonetically and the result is the creation of a new allophone like [β]. This is a typical case of regressive consonant assimilation, as seen in the words below :

dövmek	[dö β mek]	«to beat up»	not[döwmek](5)
tövbe	[tö βbe]	«repentance»	not [töwbe]
kovboy	[ko β boy]		not [kowboy]

It must be noted that there is a new claim here which is that up to now /v/ was thought to be as [w], which is a voiced bilabial fricative in Turkish, requiring the pursing of the lips, but the lips are not pursed as much as in /w/ of the English words **witch** or **will** (Turkish [w] almost half of /w/ in terms of rounding). The new claim here is that the Turkish sound in **dövmek** and **tövbe** is not [w], which was the commonly shared idea by most phonologists, but is [β], which is a voiced bilabial fricative. Similarly, in the following words, it is not [w] but [β] which is clearly heard :

tavuk	[taβuk]	«hen	kovuk	[koβuk]	«hallow»
bavul	[baβul]	«suitcase»	kavun	[kaβun]	«melon»
davul	[daβul]	«drum»	havuç	[haβuç]	«carrot»

If you repeat the above Turkish words by yourself, you will audibly hear the [β] sound clearly in the middle of words.

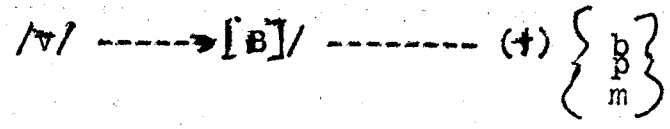
3.02. The progressive Assimilation of /v/ to [β].

The converse of the rule given in 2.02. is potentially possible in Turkish :

tramvay	[tramβay]	«tramway»
sübvansiyon	[sübβansiyon]	«subvention»

(5) The articulation of /v/ before another /v/ is more closely related to [w], but not to [β], as seen in the following words: **evvel** [ewel] «before», **Mürüvvet** [mürüwet] «a proper name, and **mukavva** [mukawa] «cardboard»

Since the change of /v/ to [β] takes place, we can assume that it will also happen after /p/, which is also a bilabial sound in Turkish The /m, b, p/ phonemes assimilate the subsequent /v/ to their bilabial place of articulation, and the rusult is the creation of a new allophone of /v/ as [β] in modern Turkish, as captured by the following rule :



The existence of the above rule is also seen in the English words below :

circumvent	[səˈkəm βent]	obvious	[ʌbBiyəs]
subvention	[sʌbβenšən]	obviate	[ʌbBiyeyt]

4.00. Bidirectional Assimilations

The magnetic attraction exerted by speech sounds on each other is in many cases bidirectional. When the place of articulations of speeech sounds are close to each other or homorganic, bidirectional assimilations start out. For example, in the Turkish word **tramvay**, which is borrowed from French, /v/ labio-dentalises the preceding /m/ :

/tramvay/ --I-- /tramvay/ --2-- /tramβay/ ---> [tramβay]

Rule I labiodentalises /m/ to [m̪] via a rule like m ----> m̪ / ---- v
Rule 2 bilabialises /v/ to [β] via a rule like /v/------ β / m̪ ----

What is going on in rule I and rule 2 is that that /v/ exerts a regressively stronger assimilatory pull over /m/ and converts it into [m̪], which is a labio-dental nasal, and in turn, [m̪] bilabilises /v/, to [β], which is a voiced bilabial fricative.

4.01. Changes in the lexicon

This type of bidirectional quality of consonantal changes may also bring about shifts in the written forms of words. For instance, the Turkish word **anfi**, borrowed from French, has obtained a dual

appearance in «Turkish dictionaries»(6) as **anfi** or **amfi.** Similarly, **konfor** «confort» and **anfibi** are being seen as **komfor** and **amfibi»** living both on the land and in the sea, «and so is the case with **amfora/anfora»** picter. The dual appearance is primarily caused by the bilabialisation of /n/ to [m] first and then by the labio-dentalisation of [m] to [m] by /v/.

Now, let's take a look at the following phonetic derivations :

enfes"delicious" /enfes/ —I— /emfes/ —2— /emfes / —3— /emfes/
infaz"execution" /infaz/ —I— /imfaz/ —2— /imfaz/ —3— /imfaz/
konvoy"convoy" /konvoy/ —I— /komvoy/ —2—/komvoy/ —3—/komboy/
ünvan"fame" /ünvan/ —I—/ümvan/ —2— /ümvan/ —3— /ümban/

1. Bilabialisation 2. Labiodentalisation 3. Bilabialisation.

4.02. Conclusion

The mutual assimilation of consonants at places and manners of articulations should be closely followed by the phonologists because phonological changes also change the identity of lexical items. The labiodentalisation of /m/ to [m,] is a phonologically plausible change before /f, v/ because they are partially alike in place of articulation since consonants also produce assimilations over each other. The following rule is a collapse of the rules stated in 2.01,3.01,3.02, into a «neighborhood rule»(7), which combines the bidirectional regressive and progressive consonantal assimilation :

$$\begin{bmatrix} f \\ v \end{bmatrix} \longrightarrow \begin{bmatrix} \phi \\ \beta \end{bmatrix} \; / \; \text{------}(\#) \; \begin{Bmatrix} p \\ b \\ m \end{Bmatrix}$$

But notice that before the application of this rule the rule of labio - dentalisation must take place :

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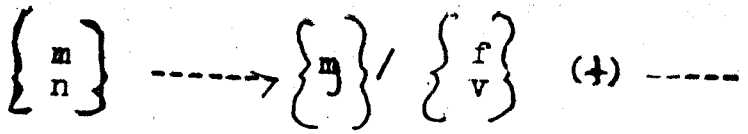
(6) **See Redhouse Dictionary :** Türkçe - İngilizce (1968) and **Türkçe Sözlük** (TDK yayını) Genişletilmiş 7. Baskı, 1981.

(7) See Mehmet Demirezen **«On Some New Allophones of Turkish /r, l m,n/ phonemes» ELT** 1985 Vol. 2. p : 17.



In accordance with the two rules stated above we can say that there are two allophones of /f, v/ as [Φ, β] the discovery of which went unheeded up to now. In brief, such consonant clusters like [fm, fb, fp, mf, bf, pf, vm, vb, vp, mv, bv, pv] are articulatorily converted into [Φm, Φb, Φp, mΦ, bΦ, pΦ, βm, βb, βp, mβ, bβ, pβ]
clusters whose existence can also be clearly heard in casual and colloquial Turkish. It is also claimed in this paper that there is no allophone of /f/ like [w] in Turkish, except the occurence of a /v/ before another /v/, as seen in kuvvet [kuwet] «power».