M. SETATOS

PHONOLOGICAL PROBLEMS
OF MODERN GREEK *KOINE*

to my teachers

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CONTENTS

ABBREVIATIONS AND SIGNS

(usual abbreviations and linguistic signs are not given, cf. also p. 56)

[+]	syllable boundary marker
+	plus
[⫫]	pause or word juncture
Ø	absence of element etc.
/	separates similar choices
-	opposition, contrast
[-]	replaces or separates parts of words or syllables
~	separates allophones
?	dubious
→	direction of linguistic change
[']	elision or apheresis mark
′ `	primary and secondary accent
( )	contains facultative elements
|	separates lexemes from derivations or grammatical morphemes
IV.1.3	= § 1.3 of the section IV

θ	dental voiceless fricative
δ	dental voiced fricative
x	velar voiceless fricative
γ	velar voiced fricative
/j/	palatalizing phoneme
C′	palatal consonant
x′,γ′	glides
[i̯, u̯, V̯, m̩]	secondary elements in a diphthong
[V͜V] or /d͜z/	one syllable or phoneme

/Γ/	central allophone or archphoneme
n	velar nasal
ᵐb, ⁿd, ᵑg	prenasalized voiced stops
ţ	affricate /t͜s/

AED	Andriotes, 1967
AG	Ancient Greek
D	Demotic
d	dialectal, provincial
f.	feminine
F	foreign
FL, FD etc.	learned foreign (word), etc.
g.	genitive
Ital.	Italian
KRD	Kourmoules, 1967
L	learned
m.	masculine
MG	Modern Greek
MGK	Modern Greek *Koine*
n.	neuter
pl.	plural
RGLDh	*Reference Grammar of Literary Dhimotiki*
sg.	singular
Slav.	Slavic
Turk.	Turkish
Venet.	Venetian
3pl.	3rd person pl.

I. INTRODUCTION

1. The difficulties encountered by scholars striving towards an analysis of the phonological structure of Modern Greek *Koine* (MGK) are well known since a number of years. There is a small number of these "dreams" or "cruces" which must be tackled with in any phonological analysis of MGK. This collection of studies forms another attempt towards a solution, preparatory to a detailed exposition of MGK phonology to appear later.

2. The basic difficulty met here, as in many other sections of Modern Greek (MG) language studies, is the notion of MGK. Is a common notion to be ascribed to MGK? What are its characteristics? What can be considered as a typical model of MGK? Are there variant types of MGK and how do they vary? What place do styles or social dialect varieties occupy in MGK?

3. There is a bewildering number of problems pertaining to the notion of MGK, not the least of which concerns the "language question". These problems have not yet been studied thoroughly nor any preparatory work has been made towards their solution (statistical research of vocabulary items, study of particular styles, social dialects, jargons etc., study of speech models etc.). Although MGK has not yet been codified to a strictly organized complex of usages, nevertheless we can say that there is a climate of opinion, a corpus of rules forming a model, considered as a kind of authority among educated Greeks.

4. Modern Greek *Koine* (I prefer this term to Common MG, 'standard' dhimotiki etc.) can be defined generally as the third common language in the history of Greek (after the postclassic and medieval ones), whose grammatical expression is based on the language of the demotic folk-songs and of the greatest part of modern literature with the additional impact (in phonetics, morphology, and vocabulary) of learned influence (cf. Triantaphyllides, 1938, § 177). We may accept as a grammatical codification of this language the "*Modern Greek Grammar*" (1941), but no corresponding dictionary exists as an authority to word use and phraseology. Modern Greek literature, the Greek press, and everyday speech in the great centers offers a variegated picture of a great variety of

forms, aberrant formations and cross-influences of different levels, social dialects, language ideals, school praxis and origin of speakers. In relation to what belongs to MGK one has to rely more or less on his own linguistic intuition, especially in the field of vocabulary (with reference to this situation resulting from the "language question" cf. Triantaphyllides, 1938), which is very often confirmed by pragmatic results in everyday experience. We cannot exclude the existence of substandards in MG, building a series of regional forms, coexisting and interfering with dialects in different geographical zones.

5. In order not to overburden the exposition, no history of former research will be given, but reference will be made occasionally during discussion to the most important articles and books expressing other solutions and opinions.

II. PALATALIZATION IN MODERN GREEK *KOINE*

1.1 This is a new attempt to state the complex facts of MGK palatalization and to find a solution of its problems in the most satisfactory terms possible.

1.2 For general problems arised by MGK see Introduction. As a practical source for examples I have used Bostantzoglou's *Antilexicon*[2] (1962), the Modern Greek Thesaurus.

1.3 Palatalization in MGK comprises different levels (or perhaps we should say stages of evolution) : some consonants show palatal allophones in complementary distribution, another group of consonants are followed by glides in a number of cases, while in a third class we find no palatalization (e.g. in learned borrowings) Cf. 3.1, I.4.

1.4 D i f f i c u l t i e s.

The aim of a phonological analysis must be the most economical, systematic, and true to phonetic facts exposition of the phonology of a language, after consideration of all possible solutions, in our case of the complex formed by linguistic phenomena within the orbit of MGK palatalization, where different valid systematizations are possible. The picture presented by these phenomena is not clear, mainly because of overlappings, although repeated attempts to solve this problem have gained a better insight into it and have come to some general conclusions. This is due to a number of difficulties which include different levels.

1.41 Phonetic analysis. In this we are confronted with problems concerning :

1) phonetic dissimilarities between palatals :

[k, g, x, γ]+[i, e, $\underset{\cdot}{\imath}$V]$>$[C′] complementary distribution (allophones)

[l, n]   +[$\underset{\cdot}{\imath}$V] $>$[C′] complementary distribution

other C   +[$\underset{\cdot}{\imath}$V]   glides after C

2) different conditions between palatals:

[k, g, x, γ]+[i, e, $\underset{\cdot}{\imath}$V], while [l, n]+[$\underset{\cdot}{\imath}$V]

other C + [$\underset{\cdot}{\imath}$V] with glides, but see other MG dialects, e.g. Pontic

3) discrimination between /CjV/ and /C$\underset{\cdot}{\imath}$V/, i.e. presence or absence of the characteristic friction of a velar. Cf. 2.532, 2.54.

4) /γ′a, o, u/ or /γ′$\underset{\cdot}{\imath}$a, $\underset{\cdot}{\imath}$o, $\underset{\cdot}{\imath}$u/? Cf. 2.512.

5) discrimination between [γ'] and [i̯]. Cf. 1.413, 2.1, 2.711.

1.42 Syllabic structure. Cf. 2.5.

1) Is a consideration of syllabic structure necessary to the distinction of [γ'] and [i̯]? Cf. [k'enúr + γ'os] = [k'enú + ri̯os] vs. [i] and [i̯] in [pió]-[pi̯ó].

2) [i̯] and [γ'] can be allophones of /i/ on the basis of syllabic structure (cf. Buyssens's "hétérophonie", 1967, 163-6; Troubetzkoy, 1949, 199-200; Avram, 1966, 385), e.g. in morphophonemics [faí] - [faγ'ú], [peδí] - [peδi̯ú].

3) /i/ can form the nucleus of a syllable or stand as [i̯] by the nucleus of a syllable forming diphthongs (ascending or descending).

1.43 Accent.

Does accent play a role in palatalization? Is it related to syllabization? In contrasting pairs like [peδía] - [peδi̯á] have we an opposition of accentuation or syllabization?

The role of accent is made clear if different forms of the paradigmatic level are given, e.g. [peδí - peδi̯á], where the movement of accent may be said to serve isosyllabism. But generally accent is ambiguous, cf. /pió/ (indication of syllabic transition is necessary in dubious cases, because accent alone is not sufficient to distinguish different forms in a phonemic transcription, e.g. /áδia/ - /áδi̯a/).

1.44 Morphemics.

Should we distinguish between root or derivation and case morphemes, e.g. [δi̯ákos] or [psari̯á] vs. [psári̯a] from [psári]? If yes, then we could posit /i̯/ or /i̯V/ and /Vi̯/ in lexemes and /i/ in both lexemes and grammatical morphemes, /i/ and /i̯/ serving thus to divide into two categories the morphemes of the language : (a) root morphemes and derivational suffixes, and (b) declension and conjugation morphemes (case endings and personal terminations). There are cases (neutralization?) among others, which delimit the area where the two categories seem to merge, e.g. ὅμοιοι = [ómi̯i] (cf. as a counterpart sandhi phenomena between words, e.g. [-i̯ a-]). On the other hand there are some exceptions : (a) there are some parallel forms, e.g. [θía] = [θi̯á], [δío] = [δi̯ó], [mía] = [mi̯á], sometimes with different stylistic functions, e.g. [alíθia] - [alíθi̯a], (b) learned (L) borrowings tend to be pronounced like demotic (D) words when they acquire meanings or connotations belonging to everyday situations, e.g. [δiáθesi] - [δi̯áθesi] (cf. 1.47). There are some difficulties in holding views such as these. A form like [peδí] can be thought to represent {peδí} + {Ø} and consequently in the form [peδi̯á] the last syllable could represent part of the stem morpheme plus the plural ending [-a]. We can say that the paradigmatic system serves to point out neutralization cases,

while subcode systems explain double phonetic forms with a possible distinction of meanings. We have the possibility of a twofold division of [ɪ] according to its origin in the synchronic system or its stability in the paradigmatic level. The stability of [ɪ] in root morphemes would suggest a phonological analysis with /ɪ/ or /ɪV/.

There can be no phonological analysis without considering at the same time the morphology of the language, because otherwise it becomes complicated and unsystematic. Cf. 1.45.

1.45 Morphophonemics. Cf. 2.4.

It includes cases with simple allophones of a phoneme, e.g. [póδi] - [póδɪa], and overlappings of allophones of different phonemes, e.g. [éfaγa] - [éfaγ'e] vs. [faí] - [faγ'ú].

1.46 Etymology.

We can add etymological considerations to morphonological sanctions to solve cases like :

(a) the status of [ɪ] in [ísɪos] - [ísɪi] vs. [peδí] - [peδɪá], or

(b) to decide between [aítx'á] and [aftɪá] plural of [aftí].

1.47 Subcode systems of MGK.

A series of well known facts from the history of the Greek language have to be considered :

(a) learned borrowings of Ancient Greek (AG) words pronounced according to the MG pronunciation of their letters (spelling),

(b) borrowings from foreign languages, introducing new phonemes, to which must be assigned a place in the system by the language, e.g. Turk. *-ci,*

(c) possibility of wholly assimilating (a) in speech to the MG phonemic system (idiolect characteristics, rapid speech, stylistic effects etc.),

(d) assimilation of (a), (b), or (c) to a different extent to the phonemic system of MG,

(e) historical doublets (L - D).

Subcode stylistics explain cases like [δiáθesi] - [δɪáθesi], [iatrikó] - [γ'atrikó]. Cf. 2.52, 2.53, 2.7.

1.48 Lexemics.

The following points should be considered :

(a) the nature of the text to be used for the phonetic analysis of MGK. What parts of the MG vocabulary (lexicon) are to be accepted as belonging to the standard form of MGK ?

(b) the vocabulary structure of MGK. Do all L, foreign (F), and dialect (*d*) words belong to the vocabulary of MGK or some of them must be excluded from it ? What is their degree of fusion to the system of MGK,

which they eventually may cause to change (cf. [dz]⟨F, e.g. Turk. *-ci*)?
Adaptation to the morphology of MGK cannot be held as a criterium.
Cf. archaisms in MGK inflexion and indeclinable but very common F
words, e.g. [proión], [máts]. It is preferable to make distinctions accord-
ing to subcodes and to their interference with the basic neutral vocabu-
lary. It is a question of the extension of specialized vocabularies to the
average speaker's everyday vocabulary.

(c) the statistical data. Are phonetic facts like [faí] - [faγ′ú] (cf. 2.42)
numerous enough to influence the phonological analysis of MGK or
should they occupy a marginal position in it? Cf. also possible phonetic
forms like [faγ′í], [seráγ′i], and anaptyxis or dropping of intervocalic /γ/.

1.5 Mixing of levels of analysis is perhaps unavoidable if we want to
attain the aim of economic exposition, because otherwise concision and
clarity gained at one point (level) are lost at another, where complications
come to light. A phoneme can enter as a member into different subsy-
stems, having in each of them a different function, e.g. /i̯/ can be an allo-
phone of /i/ in case and verbal endings, a stem-distinguishing, or a deli-
mitation phoneme (no syllabic boundary before it). Homonyms like [sak′i̯á]
differ in structure and are distinguished by the context of situation. In
cases like [peδi̯á], [mil′i̯á], [foti̯á] etc. the distinction is also based on the
lexemes or more generally on the functional load of each kind of endings.

A phonemic analysis cannot show a perfect symmetry, because the
different cases of linguistic change taking part in the evolution of a lan-
guage don't run parallel to one another, have different rhythm, exten-
sion, causes etc., the linguistic system is unstable at every synchronic
moment. Subcode balancing and interference, with the social forces behind
them, are the major factors of evolution. We are entitled to avoid simpli-
city and accept overlappings and mixing of levels by relaxing prohibi-
tions and restrictions of the phonemic analysis.

2.0 P h o n e t i c   e v i d e n c e.
Different categories of phonetic data are given below in a prelimi-
nary analysis, covering all MG speech situations. The phonetic transcrip-
tion must be as precise and detailed as possible but in a later stage we
can simplify it by avoiding unnecessary distinctions (e.g. glides). Doubt-
ful cases cannot be avoided (e.g. [γ′a] or [γ′i̯a]), because a phonetic tran-
scription is not wholly unrelated to phonemic analysis.

2.1 Commutation table.

	[ı]	[γ]	[γ′]	[x]	[x′]
[i]	[áδia]- [áδıa]	[iliká]- [γliká]	[iatrikó]- [γ′atrikó]	[ioní]-[xoní]	[ionósfera]- [x′onósfera]
[ı]	—	[arγós]-[arıós]	[Vıéni]-[vγ′éni]	[arıón]-arxón	[arıí]-[arx′í]
[γ]		—	[γála-[γ′ála]	[páγos]-[páxos]	[γóni]-[x′óni]
[γ′]			—	[γ′alí]-[xalí]	[γ′éri]-[x′éri]
[x]				—	[xóni]-[x′óni]

2.2 Specific distribution of sounds.

[γ]   + [a, o, u],   + [δ, l, m, n, r]
       [V]+   ,   [v, k+, l+, n+, r+, z]+
[γ′] + [V]
       [V]+   ,   [v, k+, l+, n+, r+, g+, z+]+
[x]   + [a, o, u],   + [θ, l, m, n, r, t]
       [V]+   ,   [k+, n+, r+, s, f]+
[x′] + [V]
       [V]+   ,   [k+, n+, r+, s, f, l+]+
[i]   + [V]   ,   + [C] minus [b, g, d]
       [V]+   ,   [C]+ minus [k, g, x, γ]
[ı]   + [V]
       [a, o]+ ,   [C]+ minus [k, g, x, γ, l, n]

2.3 Glides.

They appear in the accented or unaccented sequence [(+)C$_1$V(+)] after the [C] as follows :

[x′] [p, t, f, θ, s]+, e.g. [px′ıós], [matx′ıés], [karfx′ıá], [vaθx′ıá],
                                                                  [krasx′ıá]

[γ′] [b, d, v, δ, z, r]+, e.g. [kombγ′ıázo], [pundγ′ıázo], [karávγ′ıa],
                                                [δγ′ıákos], [vizγ′ıá], [varγ′ıá]

Ø [k, g, x, γ]+ which become palatals, e.g. [kak′ıá], [maɲg′ıés],
                                                          [pax′ıá], [zíγ′ıa]

Ø [l,n]+ which become [lh], [ñ], e.g. [xal′ıá], [pan′ıá]

Ø [m]+, e.g. [zimıá]

2.4 Morphophonemics (allophones).

2.41 According to [peδí] [peδıá], [vaθí] [vaθıá] [vaθıí], we must write [paní] [pan′ıá], [filí] [fil′ıá], [zíγ′i] [zíγ′ıa].

2.42 [faí] [faγ′á], [bói] [bóγ′a], [tsái] [tsáγ′a], [tramvái] [tramvaγ′éris]

2.43 [éfaγa] [éfaγ′e]

2.5 Syllable.

2.511 "Abusive" diphthongs (spurious):

[íδıa, -ıes, -ıi, -ıo, -ıu], [δıávolos], [δıefθindís], [vıolí], [g′ıuvétsi]

2.512 "Abusive" diphthongs vs. V or VV:

[ómi] - [ómɪi] = [ómii], [x′íli] - [xíl′ɪi], [makrí] - [makrɪí], [(m)áγ′i] -
[áγ′ɪi] = [áγ′ii], [na vríkan ísk′ɪi] - [na vrí kanísk′i]

2.52 One or two syllables. Cf. Triantaphyllides, 1941, 73-4.

2.521 Historical doublets :

[ðiáθesi] - [ðɪáθesi], [xorío] - [xorɪó], [víos] - [vɪós], [viázome] - [vɪá-
zome]

2.522 Stylistic or rhythmic variants :

[mía] - [mɪá], [θíos] - [θɪós], [siopí] - ʂɪopí], [telíosa] - [tél′ɪosa], [sk′iá]
- [sk′ɪá]

2.523 Exceptions :

[triánda], [apokriá], [γriá] but see [i γrɪá foní] (Kazantzakis, 1967,
16,1239) as well as [makrɪá, koprɪá, petrɪá] etc. Cf. AED.

2.53 Syllabic division.

2.531 Phonetic variants, e.g. [k′enúr+γ′os] = [k′enú+rɪos].

2.532 Distinction in friction (tense vs. lax) usually not discernible
(in rapid speech). There are few minimal pairs, so that similar sounds
tend to lose their distinction :

[ar+γ′és] - [a+rɪés], [stér+γ′i] - [sté+rɪi], [γ′atí tóso ar+γ′í?] - [γ′atí
tóso a+rɪí?]

2.54 Greater friction :

[lésx′es] vs. [ísɪes], [efx′és] vs. [xafɪés], [isx′í] vs. [ísɪi]

2.55 Syllabic structure.

[ɪ] is different from [γ′] or [x′] because we find [-CCɪV-] and [-CCCɪV-],
e.g. [ksistrɪá], [pandrɪá], but no [-strC-] or [-ftx′-], and [-sɪV-] is not pro-
nounced [-zγ′V-] (cf. 2.621).

2.6 Sandhi.

2.61 Internal, e.g. [kalí óra] > [kal′ɪóra]. Cf. 2.41.

2.62 External :

2.621 [tuz γ′atrús] vs. [sɪázo], [to γ′atró] vs. [ta n′ɪáta] (phonetic dif-
ference between [ɪ] and [γ′], cf. 2.54)

2.622 [páli o íðɪos] = [pál′ɪoíðɪos], [γráfi ásx′ima] = [γráfɪásx′ima],
[áγ′ii ánθropi] = [áγ′ɪánθropi]. Cf. 2.41.

2.63 [k′e aftós] = [k′aftós] vs. [vále apo] = [vál′ apo]. Cf. 1.411.

[éfaγ′e arní] = [éfaγ′arní] vs. [éfaγa arní] = [éfaγarní]. Cf. 2.43.

2.7 Marginal phenomena.

2.71 Idiolect allophones.

2.711 Pronunciations [peðγ′á], [karðγ′á] (but no [-lγ′á]), [fotx′á],
[faγ′í]

2.712 L words with D pronunciation :

[teliótita], [ðiákozmos] vs. [tel'ɪótita], [ðɪákozmos] (but not [l'ɪéno])

2.713 D words with L pronunciation (stylistic effects in speech):

[pul'ɪá] vs. [puliá]

2.72 Foreign accent, e.g. [mal'ɪá] vs. [maliá].

3.0 P o s s i b l e   s o l u t i o n s.

We start by uniting (cf. 2.) a set of phones (a sort of corpus of examples out of a text) that can be reasonably thought connected on a phonetic basis with palatalization. A number of these seem more intimately related to the phenomenon of palatalization, like [γ'] and [ɪ], while others are more or less marginal and connected each with one of the central ones, like first of all [γ] and [i] and then [x'], if glides are to be considered.

3.1 In regard to palatal consonants we find in MGK the following situation (cf. 2.2, and Grammont, 1933, 79) :

1) allophones in complementary distribution :

    (a) [k, g; x, γ] + [i, e, ɪV] ⟩ palatal C

    (b) [l, n] + [ɪV] ⟩ palatal C

2) glides : [t, d; θ, δ; p, b; f, v; r; s, z] + [ɪV] ⟩ [C] + glide + [ɪV]

3) [m] + [ɪV], [C] of (1b) and (2) + [i(V)] ⟩ no palatalization or glide.

Phonetic distribution of palatals does not corroborate a phonemic division of consonants into palatals and non-palatals. Strictly speaking palatals are only certain allophones of /k, g, x, γ, l, n/ in some environments. As a result of this, palatalization cannot be considered a distinctive feature in the phonemic analysis of MGK (MG dialects show sometimes a different aspect). The phonetic picture is clear enough, but there are three phonemic solutions: /k'a/ or /kja/ or /kɪa/, i.e. /C'/ or /j/ or /ɪV/, or still /p'a/ - /px'a/ = /C'/, or /pja/, or /pɪa/ - /pˣ'ɪa/ = /ɪV/ with glide.

3.2 The situation of glides.

We find [x'] after voiceless and [γ'] after voiced consonants (cf. 2.3). Consonant clusters don't support an equation of [x'], [γ'] to [x'], [γ'] respectively. There are no [pxa/o/u], [bγa/o/u], [txa/o/u], [dγa/o/u], [θxa/o/u], [δγa/o/u]. In cases like [vγó] - [vγ'ís], [γ] and [γ'] are allophones of the same phoneme, while in [vγázome] - [vɪázome] we have not [γ'] but [ɪ]. On the other side we find [fxa-] - [-fx'e-] but not in a minimal pair. [rγ], [sx], [zγ] exist, cf. [sxázo] - [sˣ'ɪázo], [lízγos] - [lízγ'ɪos], [zγurós] - [gazγ'ɪú]. In [kx'], [lx'], [nx']; [kγ'], [lγ'], [nγ'] we have not glides. Consequently we could envisage three solutions :

1) [láðγ'a] - [láθx'a], where [γ'] and [x'] are allophones of /j/ distinguished by /δ/ and /θ/, but see 2.4.

2) [láδγ'ɪa] - [láθxʹɪa], where there are glides before spurious diph-
thongs.

3) [láδγ'ja] - [láθxʹja], where glides are not clear and /j/ not strongly
fricative.

Cf. Filentas (1907, 69, 71) for dialectal data, e.g. [δγ'a], Cypriot
[xorkó] ⟨ [xorɪó], Ionic islands [na γδís] ⟨ [na ɪδís], Cretan [foθɪá] ⟨ [fotxʹɪá]
⟨ [fotɪá], Tsakonian [makřía] ⟨ [makrɪá], and Andriotes (1939-40, 174-5).

4. M e t h o d.

4.1 The first step towards a phonemic analysis and systematization,
in the case of problems where complications emerge by overlappings etc.,
is finding out all phones supported by an initial phonetic analysis of a lin-
guistic text. These phones are then examined

(1) in themselves and in all probable forms taken by their combina-
tions (phoneme units),

(2) as to the number of phoneme units they build up in the system
of the language. In this last case we have only to examine those combina-
tions which are viable to the system of the language, i.e. contain allophones
in complementary distribution. Consequently we must begin with 4.11.

4.2 Phoneme units.

A phoneme unit can comprise a number of allophones, some of which
may be common to other phoneme units (overlaps). The following prin-
ciples should be observed :

(1) All initial phones resulting from the phonetic analysis must be
represented in the phoneme unit list as phonemes or allophones.

(2) No phone can be repeated in the same phoneme unit.

(3) The number of allophones of a phoneme unit cannot exceed the
number of the initial phones of the phonetic text. There can be phoneme
units of $1...n$ allophones, where n = number of initial phones.

(4) The number of phonemes cannot exceed the number of phones.
The language can have $1...n$ phonemes in its phonemic system, but not
more. We have thus n possible solutions, each solution consisting of dif-
ferent sub-forms according to the possible combinations of phoneme
units differing in their number of allophones.

(5) No repetition of phoneme units is admissible.

4.3 Steps in working out an examination of possible solutions :

(1) phonetic analysis resulting in a definite number of phones (n),

(2) list of all possible phoneme units, which can be constructed by all
possible combinations of n phones,

(3) retention of viable (even partly, because of a possible overlap-

ping) phoneme units, after examination of the phonetic evidence (phonetic text, cf. 4.12),

(4) examination of all possible combinations of phoneme units in 4.33 used to cover the phonetic data and forming phonemic systems of $1...n$ possible categories as to the number of phonemes,

(5) selection of the most satisfactory combination with respect to economy, clearness and balancing of the different levels of analysis.

5. A p p l i c a t i o n.

According to the method in 4. we obtain

5.1 from a phonetic analysis of MGK the phones [γ], [γ'], [i], [ɪ], which raise the question concerning the status of [γ'] and [ɪ] (cf. also 5.41). The examination of the status of [x'] (cf. 2.1, 2.2) can be seen as an example of a typical kind of problems belonging to the preparatory phase of clearing the ground for the ensuing exact statement of the problem. In this phase we can proceed by working-hypotheses aiming at confining the problem to a small number of possible overlappings between phonetically similar allophones. By trying to cut down the number of these phones in a preliminary analysis of the most dubious of them, we must rule out [x'], because it is not connected through overlappings with the other phones but belongs to the series of palatalized consonants before [i, e, ɪV] (cf. 1.41). Connected with [x'] is the crucial problem of glides. Shall we consider them instances of [γ'] and [x'] or recognize them as glides? We can accept the latter solution on the evidence of 2.2, 2.3, 2.4, 2.54.

5.2 The phones in 5.1 form the following possible phoneme units :
/γ/, /γ'/, /i/, /ɪ/, /γ~γ'/, /γ~i/, /γ~ɪ/, /γ'~i/, /γ'~ɪ/, /i~ɪ/, /γ~γ'~i/, /γ~γ'~ɪ/, /γ~i~ɪ/, /γ'~i~ɪ/, /γ~γ'~i~ɪ/.

Examination

/γ/, /γ'/, /i/, /ɪ/ possible, cf. 2.1, but see 2.4, 2.52, 2.531.

/γ~γ'/ possible : [γ]+ [a, o, u, C], [γ']+ [i, e]. Cf. 2.43.

/γ~i/ impossible : if [γ] = C initially in a syllable, and [i] elsewhere, see [ilikά] - [γlikά], [vγάzo] - [viάzo], and the contrast of [i] = V. We don't find [γi] but the same holds for [xi]. Cf. 2.2, 2.42.

/γ~ɪ/ impossible : if [γ]+ [a, o, u] initially in a syllable, [ɪ]+ V internally in a syllable, see [vγάzome] - [vɪάzome], and there is no [γ]+ [i,e]. Cf. 2.2, 2.41, 2.43, 2.52.

/γ'~i/ problematical : [faí] [faγ'ú], but see [iatrikó] - [γ'atrikó] and [γ']+ [i], e.g. [páγ'i]. Cf. 2.42.

/γ'~ɪ/ possible : [γ'] initially in a syllable, [ɪ] internally and finally in a syllable. Cf. 2.53, 2.621.

/i~ı̯/ possible : [i] = V, syllabic nucleus; [ı̯] in diphthongs or sandhi. Cf. 2.41, 2.52, 2.61, 2.622, 2.712, 2.72.

/γ~γ'~i/ impossible, cf. /γ~i/.

/γ~γ'~ı̯/ possible : [γ]+[a, o, u, C], [γ']+[i, e] initially in a syllable, [ı̯]+ V internally in a syllable forming diphthongs, but see [vγázome] - [vı̯ázome]. Cf. 2.43, 2.53.

/γ~i~ı̯/ impossible, cf. /γ~i/.

/γ'~i~ı̯/ possible: [γ'] initially in a syllable, [i] in the nucleus of a syllable, [ı̯] in diphthongs, but see [γ'i]. Cf. 2.41, 2.42.

/γ~γ'~i~ı̯/ impossible, cf. preceding impossible cases.

Result

Viable phoneme units after examination : /γ/, /γ'/, /i/, /ı̯/, /γ~γ'/, /γ'~ı̯/, /i~ı̯/, /γ'~i/, /γ~γ'~ı̯/, /γ'~i~ı̯/.

5.3 Phonemic system.

All possible combinations of the viable phoneme units obtained in 5.2 are examined as to the degree of covering all data of the phonetic analysis. There are combinations to phonemic systems of

5.31 One phoneme. Impossible, cf. 4.21.

5.32 Two phonemes.

A number of possible combinations is preliminarily eliminated according to 4.21, namely /γ~γ'/ - /γ'~ı̯/, /γ'~i/ - /i~ı̯/, /γ~γ'/ - /γ~γ'~ı̯/, /γ'~ı̯/ - /γ~γ'~ı̯/, /γ'~ı̯/ - /γ'~i~ı̯/, /i~ı̯/ - /γ'~i~ı̯/, /γ/ - /γ~γ'~ı̯/, /γ'/ - /γ~γ'~ı̯/, /γ'/ - /γ'~i~ı̯/, /i/ - /γ'~i~ı̯/, /ı̯/ - /γ~γ'~ı̯/, /ı̯/ - /γ'~i~ı̯/, and all combinations of one-allophone phoneme units with two-allophone phoneme units, e.g. /i/ - /γ~γ'/ etc. We have to consider only the following combinations :

/γ~γ'/ - /i~ı̯/ (a) [γ]+ [a, o, u, C], [γ']+ [i,e], (b) [i] syllabic, [ı̯] non-syllabic but not initially in a syllable, rising diphthongs [ı̯V] ([γ'a] = /Γı̯a/). Data in 2.42 are not covered. Cf. Mirambel, 1959, 41-2; Newton, 1961, 278-283; Householder, 1964, 26, who accept [ı̯] = [γ'].

/γ~γ'/ - /γ'~i~ı̯/ (a) [γ]+ [a, o, u, C], [γ']+ [i, e], (b) [i] syllabic, [γ'] non-syllabic initially in a syllable, [ı̯] non-syllabic elsewhere. Difficulties arise where morphophonemics don't help to solve overlapping problems of [γ'], e.g. [iatrikó] - [γ'atrikó], [ierós] - [γ'erós]. In this case, analysis is helped by etymology, certain characteristics of L influence, and the scarceness of such data.

/γ'~i/ - /γ~γ'~ı̯/ Distinction of [γ'] difficult. Data in 2.41, 2.52 not covered.

/i~ı̯/ - /γ~γ'~ı̯/ (a) [i] syllabic, [ı̯] non-syllabic, not initially in a syl-

lable, (b) [γ]+ [a, o, u, C], [γ′]+ [e, i (=/i∼ι/)], [ι] internally
and finally in a syllable. [ι] of /i∼ι/ is distinguished only in the
sequence [γ′ιV] or by morphophonemic and etymological cri-
teria (see 2.41, 2.712). Data in 2.42, 2.531 are not covered.

/γ/ - /γ′∼i∼ι/ Data in 2.43 are not covered; existence of [γ′i], distin-
ction of [ierós] - [γ′erós] by syllabic division, etymology ignored,
e.g. γελῶ = [γ′eló].

/i/ - /γ∼γ′∼ι/ Data in 2.2, 2.41, 2.42, 2.52, 2.7 not covered. Analysis
of [γ′a] or [γιa] presents difficulties.

/γ∼γ′∼ι/ -[γ′∼i∼ι/ Double overlap. Distinction of [ι] by morphopho-
nemics or by the contrast of lexeme vs. grammatical morphemes.

5.33 Three phonemes.

In this category some general features appear, which are unecono-
mical (e.g. palatal consonants, cf. 5.341) or difficult to justify (e.g. double
or multiple overlaps). Combinations not conforming to 4.21 are excluded.

/γ/ - /γ′/ - /i∼ι/ : /C′/; data in 2.42, 2.43 not covered.

/γ/ - /i/ - /γ′∼ι/ /γ′∼ι/ : [γ′] initially in a syllable, [ι] elsewhere. Data
in 2.4, 2.52 not covered.

/i/ - /ι/ - /γ∼γ′/ : /ι/, /γ∼γ′/ :[γ]+ [a, o, u, C], [γ′]+ [i, ι, e]. Data
in 2.41, 2.42, 2.52 not covered. Cf. palatalization phoneme in Mi-
rambel, 1939, 2; Koutsoudas, 1962, § 2.21; RGLDh, 1964, 2.

/γ/ - /ι/ - /γ′∼i/ Existence of [γ′i]. Data in 2.41, 2.43, 2.52, 2.53 not
covered.

/γ/ - /γ′∼ι/ - /i∼ι/ : /C′/ or /ι/; /γ/ - [γ′]; distinction of [ι] difficult.
Data in 2.42, 2.43 not covered.

/γ′/ - /γ∼γ′/ - /i∼ι/ : /C′/; difficulties in the distribution of /γ′/. Data
in 2.42 not covered. Cf. Mirambel, 1959, 41-2.

/i/ - /γ∼γ′/ - /i∼ι/ Neutralization, difficult distinction of [i], /i∼ι/ in
paradigmatic systems. Data in 2.42, and 5.413 not covered.

/ι/ - /γ∼γ′/ - /i∼ι/ [ι] distinguished according to lexemes and gram-
matical morphemes. Data in 2.42 not covered.

/γ/ - /γ′∼i/ - /γ′∼ι/ : /C′/ or /ι/, distinction of [γ′] difficult. Data in
2.41, 2.43 not covered.

/ι/ - /γ′∼i/ - /γ∼γ′/ : /ι/, distinction of [γ′] by morphophonemics.
Data in 2.41 not covered.

/γ/ - /γ′∼i/ - /i∼ι/ Distinction of [ι] difficult. Data in 2.43 not covered.

/γ/ - /γ∼γ′/ - /γ′∼i∼ι/ Neutralization, multiple overlap, distribution
of [γ] not clear. Cf. 5.412, 5.413.

/γ/ - /γ′∼ι/ - /γ′∼i∼ι/ : /C′/ or /ι/, double overlap. Data in 2.43, and
5.412 not covered.

/γ/ - /i~ɿ/ - /γ~γ'~ɿ/ Multiple overlap, distribution of [γ] not clear. Data in 2.42, and 5.412, 5.413 not covered.

/γ/ - /i~ɿ/ - /γ'~i~ɿ/ Neutralization and double overlap. Data in 2.43, and 5.412, 5.413, 5.414 not covered.

/γ'/ - /γ~γ'/ - /γ'~i~ɿ/ Neutralization, multiple overlap, /C'/, distribution of [γ'] not clear. Cf. 5.412, 5.413.

/γ'/ - /i~ɿ/ - /γ~γ'~ɿ/ Multiple overlap, /C'/, distribution of [γ'] not clear. Data in 2.2, 2.42, 2.531, and 5.412, 5.413 not covered.

/i/ - /γ~γ'/ - /γ~γ'~ɿ/ Neutralization and double overlap, /C'/, distribution of [γ] not clear. Data in 2.41, 2.52, and 5.412 r.ot covered.

/i/ - /γ~γ'/ - /γ'~i~ɿ/ Multiple overlap, distribution of [i] difficult. Cf. 2.521, 2.522, and 5.412, 5.413.

/i/ - /γ'~ɿ/ - /γ~γ'~ɿ/ Neutralization and double overlap. Data in 2.41, 2.52, and 5.412 not covered.

/i/ - /i~ɿ/ - /γ~γ'~ɿ/ Multiple overlap, distribution of [i] and [ɿ] difficult. Data in 2.42, and 5.412, 5.413 not covered.

/ɿ/ - /γ~γ'/ - /γ'~i~ɿ/ Multiple overlap, /ɿ/, distribution of [ɿ] not clear. Cf. 5.412.

/ɿ/ - /i~ɿ/ - /γ~γ'~ɿ/ Multiple overlap, distribution of [ɿ] not clear. Data in 2.42, and 5.412 not covered.

/γ/ - /γ'~i/ - /γ~γ'~ɿ/ Multiple overlap, distribution of [γ] not clear. Data in 2.41, and 5.413 not covered.

/γ/ - /γ'~i/ - /γ'~i~ɿ/ Double overlap without clear central allophones. Data in 2.43, and 5.414, 5.415 not covered.

/ɿ/ - /γ'~i/ - /γ~γ'~ɿ/ Multiple overlap. Distribution of [ɿ] not clear. Data in 2.41, 2.52, and 5.412 not covered.

/i/ - /γ'~i/ - /γ~γ'~ɿ/ Two /i/. Cf. 5.413.

/γ'/ - /γ'~i/ - /γ~γ'~ɿ/ Multiple overlap. Distribution of [γ'] difficult. Data in 2.41, 2.52, and 5.412 not covered.

/γ~γ'/ - /γ'~ɿ/ - /i~ɿ/ Distinction of [ɿ] and [γ'] by etymological and morphophonemic criteria. Data in 2.42, and 5.416 not covered.

/γ'~i/ - /γ~γ'/ - /γ'~ɿ/ Multiple overlap. Data in 2.41, 2.52, and 5.412 not covered.

/γ'~i/ - /γ~γ'/ - /i~ɿ/ Two /i/. Cf. 5.412, 5.413.

/γ~γ'/ - /γ'~ɿ/ - /γ'~i~ɿ/ Double and multiple overlap. Cf. 5.412.

/γ~γ'/ - /i~ɿ/ - /γ~γ'~ɿ/ Double and multiple overlap. Cf. 5.414.

/γ~γ'/ - /i~ɿ/ - /γ'~i~ɿ/ Neutralization and multiple overlap. Cf. 5.414.

/γ'~ɿ/ - /i~ɿ/ - /γ~γ'~ɿ/ Double and multiple overlap. Data in 2.42, and 5.412, 5.416 not covered.

/γ′~i/ - /γ~γ′/ - /γ~γ′~ı/ Double and multiple overlap. Cf. 5.412,
5.413, 5.414.

/γ′~i/ - /γ~γ′/ - /γ′~i~ı/ Double and multiple overlap. Cf. 5.412,
5.413.

/γ′~i/ - /γ′~ı/ - /γ~γ′~ı/ Double and multiple overlap. Data in 2.41,
2.52, and 5.412 not covered.

/γ′~i/ - /i~ı/ - /γ~γ′~ı/ Multiple overlap. Distinction of [i] not clear.
Cf. 5.412, 5.414, 5.416.

/γ~γ′/ - /γ~γ′~ı/ - /γ′~i~ı/ Double and multiple overlap. Cf. 5.412.

/γ′~ı/ - /γ~γ′~ı/ - /γ′~i~ı/ Double and multiple overlap. Cf. 5.412.

/i~ı/ - /γ~γ′~ı/ - /γ′~i~ı/ Double and multiple overlap. Cf. 5.412,
5.414.

/γ′~i/ - /γ~γ′~ı/ - /γ′~i~ı/ Double and multiple overlap. Cf. 5.412,
5.414.

/γ/ - /γ′/ - /γ′~i~ı/ : /C′/. Data in 2.43 not covered.

/γ/ - /i/ - /γ~γ′~ı/ Distinction of [γ] difficult. Data in 2.41, 2.42, 2.52,
and 5.413 not covered.

/γ/ - /ı/ - /γ′~i~ı/ Distinction of [ı] by etymological and morphopho-
nemic criteria. Data in 2.43 not covered.

/γ′/ - /i/ - /γ~γ′~ı/ : /C′/. Data in 2.41, 2.42, 2.52 not covered.

/i/ - /ı/ - /γ~γ′~ı/ Distinction of [ı] difficult. Data in 2.41, 2.42, 2.52
not covered.

/γ/ - /γ~γ′~ı/ - /γ′~i~ı/ Double and multiple overlap. Cf. 5.412,
5.413.

/γ′/ - /γ~γ′~ı/ - /γ′~i~ı/ : /C′/. Double and multiple overlap. Cf.
5.412.

/i/ - /γ~γ′~ı/ - /γ′~i~ı/ Double and multiple overlap. Cf. 5.412,
5.413.

/ı/ - /γ~γ′~ı/ - /γ′~i~ı/ Double and multiple overlap. Cf. 5.412.

5.34 Four phonemes.

The combinations of this category are not given below because they
present some or all of the following characteristics (disadvantages of so-
lution) :

(1) /C′/ or /ıV/ (cf. 7.3). Cf. Hatzidakis, 1898, 146; Filentas, 1907, 44-5;
Thumb, 1910, 3; Triantaphyllides, 1941, in § 23; Hamp, 1961, 101-2, etc.

(2) Data in 2.4, 2.52, 2.531 are not covered.

(3) Double and/or multiple overlaps, which make distinction be-
tween allophones difficult or impossible. Cf. 5.41.

/γ/ - /γ′/ - /i/ - /ı/ : /C′/. Data in 2.4, 2.52, and 5.414 not covered.

/γ/ - /γ′/ - /i/ - /γ′~ı/ : /C′/. Data in 2.4, 2.52 not covered, etc. etc. etc.

5.4 Solution.

5.41 In search of the most satisfactory solution covering all phonetic data we must try to (cf. also Newton, 1961, 277-8; Householder, 1964, 25):

(1) avoid, if possible, $/C'/$ aiming at the simplicity of the phonemic system.

(2) avoid double and/or multiple overlaps (i.e. (a) $/A \sim c \sim d/$ - $/B \sim c \sim d/$, (b) $/A \sim d/$ - $/B \sim d/$ - $/C \sim d/$, or $/A \sim d/$ - $/B \sim d/$ - $/C \sim a/$ etc.) but not forcibly simple overlaps (i.e. $/A \sim c/$ - $/B \sim c/$).

(3) avoid neutralizations (e.g. $/a/$ - $/b \sim a'/$), double neutralizations (e.g. $/a \sim b'/$ - $/b \sim a'/$), and neutralizations plus overlaps (e.g. $/A \sim d'/$ - $/B \sim a' \sim d'/$) not supported by phonetic data.

(4) avoid instances where part of a phoneme unit with central allophones forms another phoneme unit.

(5) consider more readily semivowels or semiconsonants, heterophones etc. as overlapping allophones than vowels or consonants.

(6) avoid phoneme units formed by different allophones of phoneme units in multiple overlap.

(7) examine in the groups of a greater number of phonemes only the cases which contain a satisfactory solution reached during the examination of the groups with fewer phonemes. It is possible that another acceptable solution could be found, if not more economical. In most cases solutions with a great number of phonemes contain superfluous distinctions or parts already discussed in the groups with fewer phonemes.

(8) distinguish the central allophones, although theoretically any initial phone of the phonetic analysis could be an allophone of each one of the others considered as a phoneme.

5.42 According to the considerations in 5.41 we can select as the most satisfactory solution of our problem the following :

$/\gamma \sim \gamma'/$ - $/\gamma' \sim i \sim \iota/$ or $/\Gamma/$ - $/I/$ with heterophony of $/i/$ and overlap of $[\gamma']$.

We could arrive of course at this conclusion very simply by sorting out the allophones of $/i/$ and $/\gamma/$ in 2.4 (2.41 and 2.42 give us $/i \sim \iota \sim \gamma'/$, and 2.43 $/\gamma \sim \gamma'/$. Cf. also 2.52, 2.61, 2.622, 2.712, 2.713). However, at that stage of our analysis we had no way to know yet that there does not exist a phoneme $/\gamma'/$ or $/\iota/$ or $/\gamma' \sim \iota/$ or $/\gamma \sim \gamma' \sim \iota/$ in the phonemic system of MGK (cf. 2.1, 2.3, 2.511, 2.711). Sometimes we find contrary forms (cf. 2.711) permitting another analysis, e.g. $/\gamma \sim \gamma'/$ - $/i \sim \iota/$, forms contained in 2.42, 2.711 being considered as variants. If we ignore 2.42, many solutions are possible (non-uniqueness of phonemic analysis).

6. Methodological conclusions (concerning general linguistics) :

(1) syllabization must be taken into account by phonemic analysis in working out the phonemic system of a language. Accentuation alone cannot provide a solution for all cases (cf. 2.521). We must recognize a syllabic transition, juncture, or hiatus unit.

(2) the whole language system, in all its levels, must be examined (morphophonemics etc.), in order to obtain the most economical solution.

(3) the phonemic system may not be perfect. Some overlapping (statistically insignificant and tending to regularity) cannot be excluded, if we want to give a faithful representation of phonetic data, without simplification and normalizing (which in our case could have a realistic basis in speech, denoting a phonemic analysis into e.g. $/\gamma \sim \gamma'/$ - $/i \sim \mathfrak{1}/$).

(4) sometimes a solution (as the present one) is supported by the history of the language or by the dynamic state (possibilities of evolution) in which the synchronic system happens to be.

7. Additional remarks.

7.1 Method.

Is a partial use of the method feasible, with a small number of phones, or must we begin with the whole inventory of them?

This method is a discovery procedure trying to assemble all possible solutions or working-hypotheses aiming at the solution of a given phonemic problem, before comparing them to the data of the detailed phonetic analysis, which forms the basis of an examination.

Overlapping cannot be supposed to extend over the whole phonemic structure of a language, but must be confined to marginal cases. Some places in linearity (syllables) carry a greater information load (more distinctions) than the others.

If this method is applied to all phones simultaneously, a great complication would ensue. We can make a better use of it, if we apply it only in case a problem arises during the phonemic analysis of the language, which can be accomplished otherwise by the usual methods (commutation etc.)

7.2 Transcription problems.

(1) phonemic.

How will be distinguished sequences like [-ia-] vs. [-ɪa-] in a phonemic analysis notation, if we have recognized a phoneme unit in $/i \sim \mathfrak{1} \sim \gamma'/$, e.g. [viázome] - [vɪázome], [tsái] - [tsaɣ'ú] (cf. Jones, 1967, 256-7)? We can use:

(a) a transition phoneme or hiatus mark (e.g. $+$) in the most dubious

cases and consider it present in all vowel sequences of the form /íV/ (syllabic division marker contrasting with zero).

(b) /iV/ to denote syllabic extension.

(c) /ι̯/ to note syllabic formation (heterophony).

(2) orthographic (spelling).

We must write necessarily γιατρικὸ but we can use in a phonemic notation (cf. 7.21)

(a) /ι̯atrikó/ = [γ′atrikó]

(b) /iatrikó/ = [γ′atrikó]

(c) /iatrikó/ vs. /i + atrikó/

(d) /γiatrikó/ without etymological considerations.

7.3 Problem of spurious or "abusive" diphthongs.

A stable [ι̯V] (cf. 2.511) could be taken in a phonemic analysis as representing a certain class of phonemes. Against this assumption there is the evidence of 2.41, 2.512, 2.521, 2.522, 2.61, 2.622, 2.63, 2.712, 2.713.

The solution of heterophony we admitted above (cf. 5.42) is simpler by dispensing with "abusive" diphthongs and it is supported by phonetic evidence.

The problem of diphthongs in MGK will be examined in the next section.

III. DIPHTHONGS IN MODERN GREEK *KOINE*

1.1 It is a well known fact that in MG utterances there are syllables comprising two vowels as a nucleus and forming thus what is called by definition (cf. Jespersen, 1913, 207; Gleason, 1966, § 15.22) a descending (falling) or ascending (rising) diphthong (diphthongs : syllables of two morae each, covered by vowels or semivowels and forming sequences of different vowels, or vowels and semivowels, or vowels with change in quality during the course of their pronunciation). There is a greater number of them in rapid everyday speech (especially in its sandhi phenomena etc.) than in carefully pronounced sentences. The scholars who have studied them are not always in accord as to their number or status, foreign hellenists showing a propensity to increase their number in contrast to native grammarians or to the linguistic sense of native speakers (cf. Mirambel, 1939, 20; 1959, 42; Roussel, 1922, 52, or Filentas, 1907, 34, etc. as opposed to Triantaphyllides, 1941, § 65, or Roussel, 1922, 52 for rising diphthongs, etc.).

1.2 The notion of MGK is here also of importance (cf. I.3, .4). Many instances of diphthongs in MG appear in words or phraseological units bearing the mark of dialectal origin. They are frequently met in literature or are heard in the melting-pot of the great cities (Athens, Salonica) or the regional capitals (provincial centers). Filentas (1907, 34) for instance admits the existence of the following diphthongs in MG : [au], [ae], [ou] etc., e.g. [Menélau], [fáe], [zóu].

1.3 In addition to falling and rising (spurious or "abusive") diphthongs, there appear sometimes in rapid speech triphthongs (cf. Triantaphyllides, 1941, § 25).

2.0 R i s i n g   d i p h t h o n g s.

2.01 Definition. Rising diphthongs are vowel sequences forming one syllable in which the main stress is in final position (the second element is more prominent), e.g. [ịV] and [ụV] in MGK must be interpreted as sequences of [i], [u]+V, where [i, u] have a non-syllabic value. This formation of rising diphthongs relates them to the complex of problems comprised under palatalization and examined in the previous section (cf. II.1.423, .1.44, .2.511-2, .7.3).

2.02 There are some structural characteristiés of rising diphthongs which are also found in falling diphthongs and make it possible to unite them under the same general rules or tendencies (cf. 4.1) in relation to the structure of the syllable.

2.03 Their phonemic status in the phonological analysis of MGK is ambivalent and displays a number of difficult problems, some of which have been touched upon in the section on palatalization, while others will be dealt with in the following. Consider the following problems :

1) The phonological analysis of [(+)γ′e(-)] can be /γe/ with [γ′] allophone of /γ/, or /ɣɹe/ = (1) /γ/ + /ɹe/, or (2) /γ/ + /i/ + /e/ (where [ɹ] is nonsyllabic /i/, and cf. the contrast : [γ′éros] vs. [éfaγ′e] from [éfaγa] or [iatrikó] - [γ′atrikó]), or /ɹe/ (cf. /ierós/ - /ɹerós/ = [γ′erós]). Cf. II.5.32.

2) The morphological analysis of [xoɹó], [xoɹátis], [xoɹulák′i] etc. confronts us with the difficulty of a lexeme (root) having the form [xoɹ-], but we can accept a form [xori-] on the evidence of historical doublets, e.g. [xorío] - [xoɹó]. Cf. II.2.521.

3) Accentuation of the vowel in the sequence [i]+[V] cannot be taken as the explanation of the formation of rising diphthongs, because in MGK we find L words like [pió].

4) Syllabization could compel us to accept [ɹV] as a diphthong (isosyllabism in declension), but a richer morphology would result in this way (more terminations).

5) A distinction betweeñ root morphemes (lexemes) and termination morphemes is not always possible, e.g. [sak′ɹá] = (1) pl. of [sak′í], (2) sg. f. in [-ɹá].

2.1 Part of the problems arised by diphthongs in MGK is related to the problem of palatalization (cf. II.7.3). This is especially true for the spurious or "abusive" (καταχρηστικοί) diphthongs.

Should we posit [ɹV] as independent phonemes or assign them a marginal existence in MGK phonology as formed by non-syllabic [i]+[V] (heterophony) ? We have seen (cf. II.1.44, .1.45) that morphophonemic phenomena, L borrowings, different origin of lexical items etc. have obscured the clear phonetic character of spurious diphthongs in the roots of inherited words in MGK. On the other hand, an economy is to be gained by avoiding their phonemicization at the expense of heterophony (overlapping), which in a way means to be true to the spirit of the language. Consequently it is more economical to avoid including [ɹV] in the system of MGK phonemes, by holding them to be instances of syllable nuclei formed by non-syllabic /i/ +[V] (stable in lexemes, alternating with syllabic /i/ in morphophonemics and in word or sentence sandhi).

2.2 [u̯V] rising diphthongs must be excluded from the phonetic struc-
ture of the word in MGK (cf. [Vu̯], 3.2, but see RGLDh, 64, etc.). There is
no parallelism with the situation of [i̯V] in this respect, namely

1) no data for morphophonemic considerations (heterophony etc.).
Cf. II.2.4.

2) small number of words with [u]+[V] in their stems, contrasting
with [i̯V] (cf. 3.0, 3.145; II.1.44). Cf. (1) L, e.g. [altruizmós], [uísk'i], (2)
D, e.g. [vuízo], [manuáli].

3) no glides between [C] and [u̯V]. Cf. II.2.3, .3.12, .3.2.

4) no diphthongal pronunciation is perceived by the linguistic sense
of the speakers.

5) no friction as in [karδγ'á] etc. Cf. II.2.54, .2.711.

6) no historical doublets as in [δiáθesi] - [δi̯áθesi], [iatrikó] - [γ'atrikó].

We find exactly the opposite situation in sandhi. It is only as a fea-
ture of sentence phonetism in rapid speech, where it serves as a kind of
juncture mark, that we find a non-syllabic pronunciation of [u] as an in-
termediate phase to apheresis of following [V]. Ex. [tu̯ áfisa] vs. [t'áfisa] =
[to áfisa], [tu̯ éδosa] ⟩ [tú'δosa], [tu̯ órγosa] ⟩ [tú'rγosa], [tu̯ ípa] ⟩ [tú 'pa],
[pu̯ úte] ⟩ [pú'te].

3.0 F a l l i n g   d i p h t h o n g s.

The small number of falling diphthongs in MGK is explained by
their history. Their origin (if it is Greek) is to be traced back in a sequence
of vowels (Vi) at different periods of Postclassic Greek (AG [Vi̯] had been
monophthongized by that time, e.g. [ai̯] ⟩ [e] etc.). The number of words
with VV in root morphemes was small, while in final syllables they were
preserved by the necessary clarity of grammatical morphemes. A great
number of AG words presenting the above-mentioned features disap-
peared. Cf. the parallel case of rising diphthongs (i̯V), with allophones in
morphophonemics and stable elements in root morphemes, which exist
in greater numbers owing to compounds having the preposition [δi̯a-] as
first member and to L words.

It is preferable to speak about heterophony than diphthongs in
MGK, because in this way we avoid a confusion with different aspects of
external sandhi resulting in a great number of diphthongs, with frequently
a disconcerting physiognomy. Special mention should be made also of
speech variants and internal sandhi as well as marginal cases (F words,
lexical interference).

The existence of real diphthongs is proved by the impossibility of a
disyllabic pronunciation of words with [Vi̯] (cf. 3.144). The reverse is hard
to prove, because the sentiment of the speaker is confused by the results

of sandhi phenomena. In face of that, [Vu̯/u̯V] cannot be parallel to [Vi̯/
i̯V]. They are not perceived as diphthongs (cf. 2.2, 3.2).

3.1 [Vi̯].

3.11 Phonetic data.

3.111 Ordinary vocabulary (cf. IV.7.1; V.5) :

1) AG: [nerái̯δa], [k'elai̯δó], [ai̯δóni], [korói̯δo], [xai̯δévo], [kai̯ménos], [ái̯de], [voi̯δómiγa], [mai̯mú], [γái̯δaros]?

2) F : [xai̯váni], [mái̯na], [mai̯danós], [gái̯δa], [γai̯táni, -náki]

3.112 Poetical and popular words, colloquialisms etc. (cf. IV.7.2; V.5.2) : [vói̯δi], [rói̯δi/o], [vói̯θa], [oi̯mé (-na)], [ai̯lí], [klái̯mata], [kái̯ma], [xái̯δi], [δoδekái̯mera], [xai̯malí] = [xamai̯lí], [ai̯tós], [vái̯], [avγoléi̯mono], [anapai̯mós], [liγói̯meros], [kakai̯δí], [mei̯dáni], [eftái̯meros]

3.113 Dialectal forms :

[laδi̯á]⟩[lai̯δá] in Mani (cf. Filentas, 1907, 113-4 "μεταπήδημα"; Hatzidakis, 1901, 227 : [Vi̯]+dental or resonant), [θa i̯δó]⟩[θa δi̯ó], [to i̯θá-k'i]⟩[to θi̯ák'i], [tái̯ses], [sta evréi̯ka], [klái̯mata] etc. Cf. 3.112.

3.114 Free variation (rapid tempo of speech etc., cf. II.2.522) :

1) Words : [olói̯δi̯os], [apói̯δe], [Ai̯vasílis], [ai̯vasil'i̯átikos], [kai̯mák'i], [fai̯tóni], [δi̯áole], [píi̯ma], [olói̯si̯os], [kaloi̯δés]?, [pái̯], [xúi̯], [aeropláno], [xtípae], [elei̯mosíni], [pai̯δák'i̯a]

2) Phraseological units etc :

[pái̯ pi̯á] vs. [pái na δí], [δém bái̯ na léi] vs. [δem bá na léi̯], [pái̯ k'a-ftós na δí] vs. [pái na δí tí éγ'ine]

3.115 Sandhi.

[na i̯δó], [pú i̯tan], [θá i̯mun], [ma miδé]⟩[mái̯δe] (contact anticipation), [kalá i̯ne] (cf. II.2.622); [tó i̯xa]⟩[tó xa] (apheresis); [to aeropláno]⟩[taeropláno]⟩[taropláno] (elision)

3.116 Derivation (cf. 3.123; II.2.41, .2.522) :

[sói]⟩[soi̯líδikos], [mái̯na]⟩[maináro]

3.117 Composition : [δoδekái̯mera], [olói̯δi̯os], [apói̯δe]

3.118 Commutation (cf. II.2.512) :

[léi] - [léo] - [lén] - [líi], but no commutation with VV (cf. Martinet, 1965, and V.; VI.2) in [kai̯ménos] - [kaménos], [kai̯mák'i] - [kamák'i]

3.119 Origin (cf. Filentas, 1907, 83, 99-104; Hatzidakis, 1901, 225-232) :

[voíθa]⟩[vói̯θa], [aiδóni]⟩[ai̯δóni] (cf. [iatrós]⟩[γ'ätrós]); [-ae-]⟩ [-ae-]⟩[-ai̯-], e.g. [aetós]⟩[ai̯tós],[ágete]⟩[ái̯te] d, i.e. fusion vs. dropping (cf. 3.115) as in [tró(γ')is]⟩[trós], [k'éis]⟩[k'és], [lei̯móni] d ⟩ [lemóni], [ái̯de]⟩[áde], [γái̯δaros]⟩[γáδaros] d, etc. Cf. for [i̯V][si̯aγóni]⟩[sa-

γóni], [alaksιá]⟩[alaksá] *d*, and for [u̯V][manu̯áli]⟩[manáli]. For a spontaneous creation of [V₁] cf. Pernot, 1907, 197-8.

3.1.1.10. Evidence against hypothetical diphthongs (cf. II.2.42) :
[bói][bóγ'a]

3.1.1.11. Stylistic variants, social dialects :
[aetós] vs. [aι̯tós], [kaimák'i] vs. [kaι̯mák'i]

3.1.1.12. Idiolects :
[γlikóι̯xo], [K'írι̯e eléι̯son]; [estiatórι̯o] (children), [omι̯okataliksía] (schoolboys) etc.

3.1.1.13. Special effects (Cf. 3.134; II.2.713) :
[γaiδúri], [xaiváni], [koróiδo]; [próι̯mos]

3.1.1.14. Contrasts :
1) D - substandard : [áι̯de] vs. [áde]
2) D - *d* : [k'elaι̯δó] vs. [k'elaδó], [γáι̯δaros] vs. [γáδaros]
3) L - D : [aiδía], [aiδós] vs. [aι̯tós]
4) FL - FD : [xaidúk'i] vs. [xaι̯váni] (cf. [pansión] - [solisι̯ón])

3.1.1.15. Foreign words :
1) one form : [náilon], [sánduits], [g'éisa] (cf. 3.121, 3.122)
2) variants : [tróika] = [tróι̯ka], [bairák'i] = [baι̯rák'i] (Cf. 3.124)

3.12 Remarks and problems.

3.121 According to the principles of morphemic clarity in the grammatical features of word terminations (cf. 3.0; II.1.44) words like [tsái], [bói], [sói], [sk'ilolói], [tramvái], [trólei], [kalái], [mái], [béi], [sing'enolói], [xamói], [xúi], [kolái], [léi], or variants like [kombolói], [mirolói], [anói], [katói], [peδolói], [kuvendolói] should be considered disyllabic. Cf. II. 2.42, although not all of them are inflected in all cases.

3.122 L coloring : [koróι̯δema] vs. [koroiδía] (variant [koroι̯δía])

3.123 Accent :
[kaι̯mós] vs. [kaíla], [máι̯na] vs. [maináro], [imám baι̯ldí] vs. [baildízo], but cf. [neráι̯δa], [néraι̯δos], [neraι̯δoγ'eniménos]

3.124 One or two syllables :
[láitmotìv], [béizbòl], [koktéil], [féivolán], [zeibék'ikos], [kalaidzís] (cf. 3.1.1.15.); [skolikoiδítis]

3.125 L loanwords : [aiδía]

3.126 Morphemic clarity :
[la-ikós], [eγo-izmós], [aplo-ikós], [romé-iko], [tá-izma], [plai-nós], [korakozó-itos], [γ'ι̯uxá-izma],[anθropo-iδís], [arxa-izmós], [pro-ipóθesi], [pró-imos], [ametanó-itos]

3.127 Composition :
[voι̯δómiγa] but not [vóι̯δi] in MGK, [kakóixos] vs. [liγóι̯meros]

3.128 Derivation : [xáδi] vs. [xaιδévo]. Cf. 3.1354.

3.129 Vacant places in the system.

We find [aι],[oι] but not [eι],[iι] (the case for [uι] is not clear), explain-
ed possibly by the greater opening or distance of articulation of the two
vowels participating in the formation of a diphthong.

3.13 Discussion.

3.131 Phonetically the existence of diphthongs cannot be subject
to doubt. Cf. 3.111, 3.112, 3.1.1.13.

3.132 Phonemic status. The number of words containing [Vι] is small
and their frequency statistically unimportant. There are many "cases
vides" in the system of falling diphthongs (cf. 4.14).

3.133 Their marginal status is shown by :

1) their importance as a feature of speech. Cf. 3.114 (rhythm), 3.115
(avoidance of hiatus), 3.1.1.12., 3.123, and the parallel formation of triph-
thongs, e.g. [petáιokókoras] besides [petái] and [petá].

2) the change in the phonetism of F loanwords (e.g. [láitmotiv]) or
the uncertainty in their pronunciation (e.g. [béizbòl] = [béιzbol]). Cf.
3.1.1.15.2, 3.124.

3) maintenance of morphemic clarity. Cf. 3.121, 3.126.

4) numerous L loanwords of the kind referred to in 3.125, and their
influence on D (cf. 3.122).

5) ambiguity in composition (cf. 3.127).

3.134 Pronunciation. Two successive vowels could a priori be pro-
nounced in three different ways. This is valid also for MGK in the case
of [V]+[i]. We find :

1) diphthongs (cf. 3.111, 3.112) as lexeme characteristics of D words
(cf. 3.14),

2) diphthongs and/or VV (cf. 3.114, 3.115, 3.1.1.11., 3.1.1.12., 3.1.1.
15.2) in D (and L) words,

3) VV (cf. 3.1.1.10., 3.1.1.15., 3.125, 3.126) in L (and D) words. Cf. 3.14.

The pressure of (2) and (3) helps to make a marginal phenomenon
out of (1). The linguistic sense of the speakers distinguishes grossly be-
tween D and L words, i.e. between words without hiatus in sequences of
vowels in the lexemes (with diphthongs), and words with opposite chara-
cteristics (VV). Ex. [διáθesi] - [διáθesi], [διálisi] - [διálisi] (historical
doublets), against [kaιménos] - [kaménos], [kratái] - [kratáι]. This diffe-
rence is sometimes consciously used by the speakers to obtain special
effects (cf. 3.1.1.13.), namely :

(a) use of (3) for (1), e.g. [koróiδo], [γáiδaros]. In this case a word is
given a L phonetic form, the speaker wants to present as a L word what

otherwise is a D word. In this way he succeeds in expressing certain af-
fective attitudes, e.g. irony,. cold detachment etc.

(b) use of (1) for (3), e.g. [próımos]. In this case the correct MGK pro-
nunciation is transformed by d influence in the speech of a dialect speak-
er, who finds himself socially marked by this. Otherwise it is consciously
chosen with aims and results similar to (a).

(c) cases in (2) offer a greater variety of pronunciation but with ob-
scure semantic differences (a detailed examination of their function in
speech is badly needed). Ex. [δém bái na káni óti θéli] vs. [δem báı na
káni óti θéli], [pái na δí] - [páı!].

3.135 No successive diphthongs in lexemes or two [ı] in a syllable,
i.e. we find no :

1) $[-ıV_1+]$ but cf. [δıáole]
2) $[-V_1 + -V_1]$
3) $[-V_1 + -ıV]$ but cf. d [róıδıa] (Kazantzakis, 1967, 21, 1413), and
[ftıarıá], [olóıδıos], [δıamıás]
4) $[-ıV + -ıV + ending]$ but cf. [ftıarıázo]

As we can see, exceptions occur in grammatical morphemes, deriva-
tion, composition, d words or sandhi and rapid speech. The different
phonetism of some etymologically related words is thus explained, e.g. d
[xáıδi] > [xáıδıa] > [xáδıa] > MGK [xáδi] and cf. [xaıδévo] vs. [xaδıáris], d
[vóıδi] > [vóıδıa] > [vóδıa] > [vóδi] etc. (dissimilation), or F [xamaılí] > [xa-
maıl'ıá] > [xaımal'ıá] > [xaımalí] (cf. also 3.136).

3.136 Phonetic context.

Falling diphthongs are usually followed by dentals (δ, θ, d, t) and
nasals (m, n), maybe because these sounds provide the easiest transition
from a [V_1] to the next syllable (dentals are articulated very near to the
place of [ı], nasals follow a complete closure of the mouth cavity after a
syllabic boundary). But cf. [γ'itıá] < [γoitía], [aδelfopitós] < [aδelfopiitós],
[purnó] < [proinó], [-énıos] < [-éinos]. There are nevertheless cases where
we find after [V_1] velars (k, g, x, γ), labials (p, b, f, v), resonants (l, r), and
sibilants (s, z), e.g. [tó ıxa], [xaıváni], [xamaılí], [olóısıos].

3.14 Conclusion.

1) Falling diphthongs in MGK are not to be found in final syllables
of words (except as a possible result of composition, sandhi, rapid speech
etc.) but as a stable feature of lexemes. They are felt to belong to the mean-
ing-symbolizing traits of a word and not to those denoting grammatical
or syntactic relations. When two or more vowels belonging to different
words are pronounced as one syllable, they are not perceived like diph-

thongs by native speakers, their acoustic impression in such cases being one of a rapid pronunciation of two syllables. Cf. 3.131.

2) Words containing diphthongs belong to the D or lower vocabulary level of MGK, or show a distinctive d coloring (cf. poetic language). Cf. 3.1341.

3) The hiatus found in a succession of vowels and especially in [Vi] is in MGK a characteristic of L words (but cf. [ðiafanís], [ð̯afanís], [ð̯áfanos] etc. showing the force and influence of D phonetism, which tends to avoid a hiatus in pronunciation). L borrowings entered MG in great numbers and created combinations contrary to phoneme clusters admissible in D. Thus the overall picture of MGK phonology has been to a certain extent confused. Cf. 3.1343.

4) The existence of diphthongs in MGK can be proved by a commutation procedure and by syllabization (or detection of boundaries, e.g. [ka̯ménos] - [kaménos], [ka̯mák'i] - [kamák'i]), if when pronounced as two syllables the resulting word does not belong to the standard language or is impossible (but cf. stylistic effects obtained in this way sometimes in speech, e.g. [ɣáiðaros]). Cf. 3.131.

5) The difference in frequency and functional load between [V̯] and [̯V] is due to the AG vocabulary structure (where [Vi], [iV] possess an unsystematic character and distribution) and to the vicissitudes of its history (a great number of AG words do not survive, while L compound words, with the preposition [ðia] as a first member, form a considerable part of the MGK vocabulary. Cf. also the neuters in -i etc.). Syllables with [V̯] are very rare, except in sandhi, and do not show the variety of syllables containing [̯V] (their structure is [+(C)V̯ +]).

3.2 [Vu̯].

3.21 In diachrony we find the phonetic change [-Vu̯ + -]⟩[-V + v/f/ m-] (open syllable), e.g. (ta oá]⟩[tau̯á]⟩[tau̯ɣá]⟩[tavɣá]⟩[t'avɣó], [ap'au̯-tós]⟩[apaftós], against the change of [-Vi + -]⟩[-V̯ + -]⟩[-V + -], e.g. [na iðó]⟩[na ̯ðó]⟩[na ðó] or [na ð̯ó]. There are syllables beginning with [v/fC-], but no syllable begins with [ɣ'C-]. Consequently the treatment of falling diphthongs in the evolution of the Greek language has been different for each class of them.

3.22 In synchrony there are no [Vu̯]. Cf. 2.2, but see RGLDh, 64, etc.

4. C o m p a r i s o n.

4.1 Falling and rising diphthongs ([V̯] - [̯V]).

4.11 Distribution in word structure :

[̯V] (a) in lexemes. In diachrony they show the same characteristics with (b). The same evolution is taking place now in L loanwords (old or

new formations), (b) in word sandhi and in derivation morphemes. In morphophonemics alternating with [i].

[V̯ı] (a) in lexemes, (b) in other positions only as speech variants of [Vi].

We have thus diphthongs in the first part of [ft̯ıar-ı̯á], [k'elaı̯δ-ái], but not in their final syllables.

We could maintain that diphthongs are in MGK a characteristic of lexemes, being neutralized in other morphological parts of the language, where they appear as possible variants in certain pronunciations (rapid speech etc.). The existence of L loanwords (cf. historical doublets) and D derivation rules help to confuse somewhat this phonetic picture.

Both types are marginal in some way, because rising diphthongs are subject to heterophony (by their origin) and falling ones a rarity in the language (their frequency and functional load are statistically very low), but they can be paralleled (no word ends in [Vı], no word or syllable begins with [ıV], identity of [ı] in them).

4.12 In syllabic structure.

4.121 In D the structure of the syllable shows combinations comprised in the pattern (C)(C)(C)(V̂)V(V̂)(C)(C) with a very pronounced tendency to open syllables. This general picture includes some necessary or facultative conditions (restrictions etc.) concerning the structure of syllables containing [Vı], [ıV], e.g. [-str̯ıa] but not [-VVC+] (because the tendency to open syllables would require a splitting in [V + iC] etc.). Syllables with diphthongs occur in the following structures: [+(C)V₁+C (= δ, θ, m, n)-] and [+C₁V(C)+C-], where necessary elements are in black type and facultative enclosed in parentheses. Ex. [l'ı̯ondári], [pal'ı̯ámbelo], [aδı̯órθotos], [aδı̯ándropos], [k'ı̯úng'i] (but cf. [γriá], [triánda], II.2.523); [aı̯δóni], [kaı̯ménos].

4.122 We cannot consider [Vn/m/r/l] as diphthongs, although they show some points of similarity to [Vı] (see 4.21).

4.13 Occurrence of [Vı], [ıV] in word structure. Cf. 3.135.

1. member of a compound	lexeme	derivation/grammatical morpheme	Ex.
(⧺ıV, Vı as in the 2.)⧺	ıV + ıV |	⧺	
» ⧺	Vı + Vı |	⧺	
» ⧺	Vı + ıV |	⧺	impossible
» ⧺	Vı | ıV	⧺	
» ⧺	+ ıV | (ıV)	⧺	[ksen'ı̯ası̯á]
» ⧺	ıV + Vı |	⧺	[k'elaı̯δó]
» ⧺	Vı + — | ıV	⧺	[γaı̯durı̯áris]

1. member   lexeme   derivation/grammatical   Ex.
   of a compound   morpheme
(#₁V, V₁ as in the 2.)# (₁V)+ — | (₁V)   #   [kutal'ₗá]
»   #   +V₁ | #   [koró₁ðo]
»   #   V₁+ — | #   [a₁ðóni]
»   #any admissible | ₁V or V₁ (in rapid speech)
               variety, -₁V₁- etc.

4.14 Difference between [V₁] and [₁V].

The system of rising diphthongs is complete, without gaps, because all combinations of [₁]+[V] are found in the language and form minimal pairs with the vowels as follows :

/i/   /e/   /a/   /o/   /u/

[₁i] [áði, íðe, íða, íso, ómu]   ⎫   [a₁]   [kaménos], [koménos]
[₁e] [pís, pénes, pás, pós, varúse]   ⎪   absence of minimal pairs
[₁a] [píno, pés, vázome, nóta, pú] vs. ⎬   for [o₁] ([e₁], [i₁], [u₁] do not
[₁o] [píni, pés, pás, kólas, pú]   ⎪   exist in standard MGK, cf.
[₁u] [peðí, pés, aftá, aftó, aftú]   ⎭   3.112, 3.1141)

Rising diphthongs appear sometimes as a tendency in pronunciation in certain idiolects (e.g. in L words, [k'ír₁a], or in some common double phonetic forms, [voíθia] = [voíθ₁a]). The contrast between [iV] and [₁V] is not to be found between [uV] and [u̯V] or [Vi] and [V₁] (owing probably to their small number).

4.2 [V₁+] and [Vm/n/r/l+].

4.21 There is a certain parallelism between [V₁] and [Vm/n/r/l] finally in a syllable, but not between [₁V] and [m/n/r/lV], because we find [m/n/r/lV] but no [m, n, r, l] (as [i] in [i+a]). For [m/n/r/l₁V] cf. [γ'₁V], where [γ'] = C, but we do not find [mmV] etc.

4.22 Clusters of V+nasal+C ([-V̂nd-] etc.) contrast with [V₁] by very frequent free variation medially against none in the case of [V₁]. We find [k'ela₁ðó] = [k'elaðó] in d vs. [-nd-] = [-d-] in MGK.

4.23 Small evidence against restrictions (cf. 4.13) :

VV+VV [árθra] but cf. [splán̥xna]⟩[spláxna]
VV̂V ⌢ [penínda], [sinandó], [ámembdos]
V̂V⌢+VV [emvrónditos]

4.24 The sole parallelism is found in final position in MGK syllabic structure (except F words, e.g. [pín̥k pón̥k]), where [-V(C=m/n/r/l)/₁] occurs but not [-VCC, -V₁C]. The falling diphthongs [V₁] conform to the restrictions of the end of syllables in MGK, but their distribution is different from [-Vm/n/r/l]. For the distribution of nasals see the next section (IV.4).

5. C o n c l u s i o n.

The sum of similar characteristics of [V$\downarrow$] and [$\downarrow$V] enables us to consider them as stable diphthongs in lexemes or as morphophonemic instances of heterophony (opposition of syllabization, with non-syllabic /i/ building spurious diphthongs. Cf. 2.1; II.7.3). Diphthongs are a feature of syllabic structure, i.e. a sequence of vowels (only [i] + [V], [V] + [i]) in one syllable. In this connection they have phonemic status appearing in lexemes ([$\downarrow$V] also in morphophonemic cases) and sometimes distinguishing doublets. A F /C'a/ etc. is analysed into [C'$\downarrow$a] by MGK (cf. II.7.22).

Diphthongs (or triphthongs) occur in a greater variety in facultative sandhi phenomena in speech, but they are felt by the speakers as features of a rapid tempo of speech (or of idiolects), not as significant instances of phonemic diphthongs, but as an intermediate stage toward final elision, apheresis, fusion etc.

IV. VOICED STOPS AND NASAL CLUSTERS
IN MODERN GREEK *KOINE*

1. V o i c i n g.

The problem of voicing concerns the status of the voiced stops (labials, dentals, velars) in MGK. Their distribution in word structure is uneven (cf. 4.). The greater number by far occur medially forming consonant clusters with nasals ([-mb-], [-nd-], [-ng-]). A number of these, as it is well known, continue AG voiced stops supported by preceding nasal consonants, e.g. [ándras], while the rest represent AG nasal + voiceless stop clusters. There are also some AG words which lost their initial vowel and found themselves beginning with these clusters (the nasal element necessarily disappears, no Greek word beginning with nasal + stop, e.g. [béno], [díno]). AG voiced stops in other positions have become continuants. Cf. Shipp, 1958, 238-248.

This situation, which is clear enough, was subsequently blurred by being exposed to the interference of two forces : (a) the influence of the learned language in its different forms and ideals to be attained, and (b) the foreign influence, originating in the contacts with other people and nations the Greek nation came into during its history. Learned loanwords brought new consonant clusters to MG, frequently forming double formations (historical doublets etc.), while foreign words, introducing a new distribution of sounds, raised the frequency of certain sounds known to the language (e.g. Turk. -*ci* ⟩[-dzís], intervocalic or initial voiced stops), and of unadapted consonant clusters or distribution of consonants (e.g. [sánduits]). A third confusing influence can be assigned to the sandhi rules of MGK, which tend to form new nasal + voiced stop clusters, serving thus to invalidate to a certain degree the distinctiveness of initial voiced stops, e.g. [tin dáksi] ⟩[ti ndáksi] ⟩[ti dáksi]. Finally, there is the change many words undergo in the rapid pronunciation of everyday speech.

MGK having as yet not definitely attained the constitution of a model structure of axiomatic force, especially in regard to vocabulary and phraseology items, there is found in it a variety of pronunciations and phonetic forms extending from idiolect characteristics and social dialect traits to *d* forms and L pronunciation of D words, or F words. To aim at

the most economical solution by reducing the number of phonemes (by means of disregarding or excluding a number of data belonging to sub-standard, marginal, *d*, and other cases) is to beg the question regarding the constitution of MGK by holding a personal interpretation of it.

2. We can attempt to solve the problem of voicing by beginning at the other end, i.e. by trying to observe in a phenomenology of MGK speech not only the phonetic data and the distribution of sounds in word struc-ture and in sandhi, but also the possible answers to the following question groups : possibilities of different pronunciations, word origin, subsystems (social dialects, stylistic variants etc.).

3.0 P h o n e t i c   d a t a.

Following the above formulated program (cf. 2.), we begin by assem-bling the following linguistic facts (phonetic evidence), ordered in different categories (language levels). Cf. II.2; III.3.11.

3.1 In a first (preliminary) phonetic transcription of a MGK text the following consonantal segments or sequences of consonants occur in the same positions :

[p]	[páli], [kopí]	[t]	[tóra], [ótan]	[k]	[kalós], [lákos]
[b]	[bála], [kalabók'i]	[d]	[dóbros], [modélo]	[g]	[gremós],[bigón'ɪa]
[mp]	[lámpsi]	[nt]	[kóntes]	[ɲk]	[graɲkása]
[mb]	[kómbos]	[nd]	[pénde]	[ng]	[angúri]
[ᵐb]	[ᵐbík'e]	[ⁿd]	[ⁿdíni]	[ⁿg]	[ⁿgarðɪakós]

The above sounds give the following commutation table :

3.2 Commutation table. Cf. Householder, 1964, 22-4; Newton, 1967, 390.

	[t]	[d]	[nt]	[nd]	[n]
[t]	—	[táma] - [dáma]	[kótes] -	[páta] - [pánda]	[káti] - [káni]
		[matára] - [madára]	[kóntes]		
[d]		—	—	[vendéta] - [vedéta]	[díma] - [níma]
[nt]			—	[rándzo] - [rántso]	[ménta] - [ména]
[nd]				—	[andox'í] - [anox'í]
[ⁿd]	$\left(\begin{array}{c}\text{[tropí]}\\ \text{-[ⁿdropí]}\end{array}\right)$	$\left(\begin{array}{c}\text{difference}\\ \text{in emphasis}\end{array}\right)$	$\left(\begin{array}{c}\text{no[+nt-]}\\ \text{or[-ⁿd-]}\end{array}\right)$	$\left(\begin{array}{c}\text{sandhi}\\ \text{variation}\end{array}\right)$	—

Similar tables (though incomplete) could be built up for labials and velars.

3.3 Nasal + consonant in sandhi (nasal clusters).

When nasals form clusters with the other consonants (for nasal clus-ters with [ts] and [dz] see the next section on MGK affricates, V.), the following results can obtain (for the conditions of phonetic variants cf. 7.4). Cf. Koutsoudas, 1962, § 3.20 B.

[m]+   variants   [n]+   variants
[p]   [m+p, m+b]   [p]   [m+b, Ø+ᵐb, Ø+b, n+ᵐb, n+p]
[t]   [m+t, m+d]   [t]   [n+d, Ø+ⁿd, Ø+d, n+ⁿd, n+t]
[k]   [m+k, m+g]   [k]   [*n*+g, Ø+ⁿg, Ø+g, n+ⁿg, n+k], [*n*+g′]
[b]   [m+b]   [b]   [Ø+b, m+b, n+ᵐb]   [etc. for [k′]
[d]   [m+d]   [d]   [Ø+d, n+d, n+ⁿd]
[g]   [m+g]   [g]   [Ø+g, *n*+g, n+ⁿg], [Ø+g′] etc. for [g′]
[f]   [m+f]   [f]   [Ø+f, m+f, n+f]
[θ]   [m+θ]   [θ]   [Ø+θ, n+θ]
[x]   [m+x]   [x]   [Ø+x, *n*+x, n+x], [Ø+x′] etc. for [x′]
[v]   [m+v]   [v]   [Ø+v, m+v, n+v]
[δ]   [m+δ]   [δ]   [Ø+δ, n+δ]
[γ]   [m+γ]   [γ]   [Ø+γ, *n*+γ, n+γ], [Ø+γ′] etc. for [γ′]
[s]   [m+s]   [s]   [Ø+s, n+s]
[z]   [m+z]   [z]   [Ø+z, n+z]
[l]   [m+l]   [l]   [Ø+l, n+l], [Ø+l′] etc. for [l′]
[r]   [m+r]   [r]   [Ø+r, n+r]
[m]   [m+m]   [m]   [Ø+m, n+m, m+m]
[n]   [m+n]   [n]   [Ø+n, n+n], [Ø+n′] etc. for [n′]

Variants are usual, frequent, or rare as the context of situation varies from everyday communication to special terminology. This results sometimes in neutralization, e.g. [aftí ti dropí] = (a) /aftí tin tropí/, (b) /aftí tin dropí/.

4. D i s t r i b u t i o n   i n   w o r d   s t r u c t u r e. Cf. Mirambel, 1959, 50-4; Koutsoudas, 1962, § 2.26, 2.27; RGLDh, 1964, 4-6.

4.1 Grammatical features.

Nasal clusters occur in some grammatical morphemes (endings : [-andikos, -andos, -antis, -indikos, -indos, -ondan, -ondas, -ondos, -undan, -a/i/onda, -o/unde]) or in composition (first members : [a-, an-, and-, en-, ks-, ksan-, prosen-, sin-, si*n*gata-]).

4.2 Final position.

Indeclinable F words, some in frequent everyday use (elements of modern civilization, technical terms etc.) :

[-b]   [kláb]   [-d]   [stándard]   [-g]   [zíg zág]
[-mb]   [-nd] [permanánd]   [-*n*g] [rí*n*g]
[-mp] [vámp]   [-nt] [sént]   [-*n*k] [pí*n*k pó*n*k]

4.3 Repetition.

4.31 Types of succession of nasals in neighboring syllables (principal features : voice and nasality) :

1) [n-+n-] : [nános]

[n-n⧣] : 3pl. [-nan], cf. g.pl. [-o(n)]

[n-n+d-] : [sinandó]

2) [-n + -n⧣] : [anθón]

[-n + -n + -] : [emvrónditos]

[-n + d-n⧣] : [télos pándon], [símban]

[-n + d-n + d-] : [sing'endróno]

[-m/n + m/n-] : L words in a stilted pronunciation or emphasis, e.g. [énnomos], [emméno]

[-n + Cn-) : [embnéome]

[-n + -ng⧣] : [dánsing]

3) [-nk + -nk⧣] : [pínk pónk]

4.32 Successive nasals in sentence sandhi or in composition (cf. 3.3, 4.7) offer the same picture.

4.33 The tendency to avoid nasal clusters in successive syllables of words results in simplification of one of them (nasal cluster > voiced stop), usually the first.

4.34 The tendency to open syllables (cf. III.4.121) results frequently in dropping of the nasal element of a nasal cluster.

4.4 Coexistence.

Different nasal clusters or voiced stops can coexist in (simple or compound) word structure and are subject to the general tendency of open syllables etc. (cf. 4.34; III.4.121) : [bag'éta], [baránga], [pudínga], [sing'endróno], [kontrabándo], [bánda], [berbándis], [budalás], [brúndzos], [dablás], [dóbros], [parempiptóndos], [símbanda] etc.; [andílambra] etc.

4.5 Initial clusters. Cf. Roussel, 1922, 19-35.

Voiced stops : [b]+[V, l, r-], [d]+[V, r-], [g]+[(ı)V, l, r-]

Nasal clusters : none except very rarely as variants, e.g. [ⁿdísu] for [dísu]

4.6 Medial clusters. Cf. Roussel, 1922, 19-35.

[V, g, t, l, r, z]+[b]+[(ı)V, r, l-]
[V]   +[mb]+[(ı)V, d, r, l, n, s, z-]
[V]   +[mp]+[V, t, r, l, s-]
[V, b, v, l, r]   +[d]+[(ı)V, k, r, z-]
[V]   +[nd]+[(ı)V, r, l, z-]
[V]   +[nt]+[V, r, s-]
[V,r]   +[g]+[(ı)V, b, δ, r, l, z-]
[V]   +[ng]+[(ı)V, d, r, l-]
[V]   +[nk]+[V, t, s-]

4.7 Composition.

Words form compounds under the same conditions occurring in sen-

tence sandhi. Initial [d] remains [d] between vowels. In the case of verbal augmented forms, we can have [émbenan] = [ébenan], [éndinan] = [édinan] (cf. [nd-] also in sandhi and for these verbs in any position). When the analysis of the compound word is no more clear to the linguistic sense of the speakers, many variants may occur (e.g. [d], [nd] even [nt]). Ex. [mavro-diménos], [kse-bléksimo], [sinéndefksi] = [sinédefksi].

4.8 Statistical data.

4.81 Frequency in a dictionary.

A rough estimate of words containing voiced stops and nasal clusters in Bostantzoglou's *Antilexicon* (which is representative of the vocabulary formation of MGK, with its complex and disorderly nature and the dynamic interplay of subsystems (L, *d*, F etc.) in it) gives approximately (after consideration of difficulties in the enumeration of derivatives, repetitions, grammatical morphemes etc.) the following figures:

[b] 426 ([-b(-)] 202)   [d] 171 ([-d(-)] 91)   [g] 90 ([-g(-)] 31)
[mb] 163   [nd] 502   [ng] 322
[mp] 24   [nt] 56   [nk] 18

The most significant feature resulting from this computation is the disproportion between [b] and [mb] as compared to the other two series.

4.82 Frequency in a text (*Nea Estia* 79, 1098-1105):

[b] 41   [d] 8   [g] 4
[mb] 55   [nd] 109   [ng] 44
[mp] 6   [nt] 2   [nk] 1

Mirambel (1959, 56-60) in a total of 17239 phonemes finds more voiced stops than nasals + voiced stops, and no nasals + voiceless stops. Cf. RGLDh, 1964, § 1.4; Roussel, 1922, 2-3.

5. W o r d   s t r a t a   i n   M G K   a c c o r d i n g   t o   p r o n u n-c i a t i o n. Cf. Householder, 1964, 21-2.

5.1 No multiple pronunciation possible :

[γámba], [embáθia], [kláb], [kómbos], [kompsós], [bubúk'i], [dóbros], [tabéla], [dzába] etc.

[adío], [veránda], [δéonda], [δ̩amándi], [baláda], [k'éndavros], [ksé-fando], [núntsios] etc. (cf. 4.1)

[lóngos], [langáδi], [mángas], [pung'í], [spángos], [ríng], [karag'ḁó-zis] etc.

5.2 Minimal pairs (cf. 3.2):

[púnta] - [púnda], [bánko] - [bángo], [sópa] - [sóba], [pótes] - [bótes], [káma] - [gáma], [fráko] - [frángo] etc. (in some cases a matter of usage)

5.3 Two variants :

5.31 [b, d, g] or [mb, nd, *n*g] : [krema(n)dalás], [á(*n*)g′ira], [aní(m)bo-ros] etc.

5.32 [b,d,g] or [mp, nt, *n*k] : no variation in MGK (cf. 3.2)

5.33 [mb, nd, *n*g] or [mp, nt, *n*k]: [témp/bo], [ba*n*k′/g′ιéris], [muzi-kánt/dis], [k′epé*n*k′/g′i], [kánt/de] etc. (cf. L influence, 5.7, 7.423)

5.4 Three variants :

[b, d, g] or [mb, nd, *n*g] or [mp, nt, *n*k] : [emberiéxo], [kantáδa]?

5.5 Unvoicing or loss of an element in a cluster :

[stúmboma] = [stúpoma], [tábιa] = [tápιa], [boγ′ιád/tizma], [tsim-búri] = [tsimúri] = [tsibúri], [daváni] = [taváni] (forms with voiced stops possess frequently a slightly vulgar emphasis. Cf. [ⁿd], 7.425)

5.6 Possibilities of pronunciation (prevalent vs. possible).

No statistical study of MGK pronunciation has been made in the population of the great cities to codify the most prevalent forms. By cataloguing and classifying we can detect certain possibilities of pronunciation or directions of linguistic change (data based on sociolinguistics are lacking).

The following cases occur :

1) voiceless C after final [n] ⟩ prenasalized voiced C ⟩ voiced C : [i pórta] ⟩ [tim bórta] ⟩ [ti ᵐbórta] ⟩ [ti bórta] ⟩ [i bórta] in *d*

2) voiced C- ⟩ prenasalized voiced C- (emphasis) : [dísu] ⟩ [ⁿdísu ípa]

3) medial [nt] ⟩ [nd] ⟩ [d] : [ménta] ⟩ [ménda] ⟩ [méda] (substandard), cf. 5.61

4) [nd] ⟩ (1) [nt], (2) [d] :

[endomí] ⟩ [entomí] (L influence) or [edomí] (speech variant)

The tendency to open syllables, which rules in MGK in spite of the fact that L words introduce new possibilities of syllabic structure, drives nasal clusters to evolve towards prenasalized voiced stops (beginning with a nasal "attaque", cf. AG [ek-düo] ⟩ MG [γδíno]) and finally towards simple voiced stops (the syllabic boundary is transferred before [n], i.e. [+Vn+] ⟩ [+V+n-]). There is a large margin of possible pronunciations without affective, dialectal, substandard etc. connotations. They belong to the realm of rhythm, the tempo of speech, and other secondary varieties of the pronunciation of a sentence in MGK.

5.7 L vs. D pronunciation.

Sometimes L words are pronounced according to their spelling by speakers helped to this by a certain education permitting their grammatical analysis. Spelling and phonetic features of L words sometimes encroach even upon everyday terms, e.g. [níkta] for [níxta], [ándras] for [ándras]. In some cases this "L pronunciation" is characteristic of a certain style, usu-

ally carrying a load of (conscious or unconscious) connotations belonging to *katharevousa*. New nasal clusters arise in this way, e.g. [n] + continuant : [anδría], [lavírinθos], [énγamos], [ematenxʹisía], [tímvos], [amfiválo] etc. Learned loanwords opposed to D forms give rise to numerous historical doublets, where different nasal clusters contrast each other, e.g. [anδrikós] - [andrikós].

5.8 Foreignisms.

Sometimes a [-*n*╫] is heard in F words used by Greeks speaking foreign languages, e.g. [dánsi*n*], [lívi*n* rùm] etc.

More usually we find F words pronounced like L words (cf. 5.7), e.g. [kompanía], [kompliménto], [antíka], [diletántis] etc. Cf. Triantaphyllides, 1941, § 72.

5.9 D (or *d*) vs. F (L).

Ex. [nd] vs. [nt] : [andí] - [kóntra], [sintáso]; [kumbí] - [kompanía], [emperiéxo]; [áng'elos] - [bá*n*kos], [énkʹendros]

5.10. A foreigner's pronunciation of MGK, e.g. alveolar dentals of English-speaking neohellenists.

5.11. Sentence vs. word sandhi.

In a sentence [-n╫p/t/k-] becomes [mb, nd, *n*g] (except for a close to the spelling, careful pronunciation), while we find sometimes medially only [mp, nt, *n*k] (cf. 5.1).

6.0 V o c a b u l a r y   s t r a t a   a c c o r d i n g   t o   w o r d   o r i-g i n.

Words with nasal clusters or voiced stops contained in the *Antilexicon* (cf. 4.81) divide into the following groups (cf. AED) :

6.1 AG words survive as :

1) D 383, e.g. [béno], [ambéli], [kompsós]; [dópι̯os], [vrondó], -; [gástri], [a*n*gúri], -.

2) L 368, e.g. -, [ekpombí], [kámpsi]; -, [ondótita], -; [anégδotos], [e*n*-gopí], [perísfi*n*ksi].

3) *d* 18, e.g. -, -, -; [dir̯éme], [sfendámi], -; [garδι̯akós], [a*n*galá], -.

6.2 Loanwords borrowed from different languages at different times. Cf. Jakobson, 1949, 323.

1) D 622, e.g. [karabína], [kambána], [kompanía]; [adío], [γléndi], [kontsérto]; [gázi], [má*n*gas], [bá*n*kos].

2) L 57, e.g. [verbalizmós], [kombársos], -; [modérnos], [levandínos], [parlaménto]; [purgatório], [ko*n*gréso], [ko*n*kárδa].

3) *d* 62, e.g. [zabéti], [γámbι̯a], -; [dairés], [vizikándi], -; [g'ι̯ósa], [kʹι̯úng'i], -.

6.3 Grammatically unadapted foreign words :

1) D 149, e.g. [kláb], [kombinezón], [emprimé]; [madám], [avandáz], [spónta]; [zíg zág], [ríng], [tánks].

2) L 68, e.g. [klób], [pombé], [ampér]; [moderáto], [landó], [kontrálto]; [zigoló], [klíring], [tánk'er].

3) d 3 e.g. [patirdí].

7. Vocabulary strata according to subsystems etc.

7.1 Ordinary vocabulary. Everyday terms of general interest (sometimes transient, impressive formations): e.g. [gremízo], [áng'ira], [tánks], [béno], [γambrós], [lámpsi], [daváni], [kondá], [rántso].

7.2 Lower vocabulary (ranging from colloquialisms to vulgarisms and dialectisms) : e.g. [banízo], [ambóθo], [komplé]?, [madára], [berbándis], [levántes], [gastróno], [mangúra], [bank'iéris]?

7.3 Technical terms (professional terms, jargon expressions, scientific vocabulary etc.) :

1) d (F), e.g. [g'esémi], [g'iósa], [k'iúng'i], [γ'iámboli], [ambolí], [kompáso], [dairés], [sfendámi].

2) F, L, e.g. [pogróm], [klíring], [konkorδáto], [kontrabáso], [ambúla], [ampér], [baláda], [núntsios], [memorándum] etc.

7.4 Variants.

7.41 Two or more pronunciations of the same word may be :

1) equivalent in information and in function,

2) equivalent in function but not in information,

3) different in function and in information,

4) neutral (basic) vs. colored (marginal),

5) normal vs. fantastic,

6) of uncertain phonetism.

7.42 According to these cases of possible opposition and contrast between different forms, we may distinguish the following categories :

1) faithfulness to foreign phonetism (F technical terms of popular (flowers, trades, professions etc.) or learned origin, e.g. [skambavía], [palángo] etc. Cf. 5.8, 5.10., 6.2, 6.3, 7.3).

2) devious phonetism : d or vulgar and substandard forms (e.g. [andío], [mandám], [mondélo], [báda], [kábos] etc.), forms indicating some kind of illiteracy (e.g. [tambló]), features of individual phonetism or deficiency in articulation (e.g. nasal pronunciation). Cf. also 7.424.

3) double possible forms arise from : scholarly influence (L influence is exerted by the written form of L words in emphatic or merely self-conscious pronunciation of learned words, e.g. [ámemptos]), an effort to avoid confusion or to attain distinctiveness in elocution, (e.g. [tin tropí]

= [tin dropí]), an unstrained or loose way of speaking, often with a slight-
ly vulgar connotation (e.g. [pliθidikós] for[pliθindikós] in a scholar's speech,
[egataliménos] = [eŋgata(le)liménos], [káne sti báda (= bánda)] etc.).
The fact that a double pronunciation is possible in some cases does not
mean that there is not a standardized pronunciation, but it implies that
the meaning of the word does not change, not even through the acquisi-
tion of affective connotations.

4) use of different registers for affective connotations : e.g. μάγκικο
ύφος (slang, argot) and other similar registers forming a rich inventory,
where the principal role is played by intonation (e.g. [γ'íγadas] = [γ'í-
γandas], [káni to gabóso (= kambóso)], [pedára (= pendára) tsakistí]
etc.), use of L phonetism to obtain ironic, jocular etc. effects (e.g. [man-
δám], [dantéla], [karaŋg'iózi]), use of impossible or fantastic forms (e.g.
[dzámpa]).

5) emphatic pronunciation. Nasals are used in some cases to indicate
emphasis, because nasal clusters (initially in a syllable) require a greater
effort in pronunciation than simple voiced stops (e.g. [ᵐbés epitélus!]).

6) uncertain pronunciation (d or F technical terms not belonging to
the ordinary vocabulary etc. Cf. 7.421).

8. D i s c u s s i o n.

8.1 We can compare voicing to the problem of palatalization (cf.
II.3, .5.1). We had started there from the following possible notations :

[γ'a], [γ'ja], [γ'ʝa] besides [γ] (and [i])

[x'a], [ˣ'ja], [ˣ'ʝa] besides [x]

posing the problem of the phonemic status of [j] or [ʝ] or [C']. In the same
way, we have here : [nd], [ⁿd] besides [d]; [nt] besides [t], posing the pro-
blem of the phonemic status of the clusters [nd], [nt], [ⁿd] in commuta-
tion with [d], [t], but not of [n] (or [ⁿ], whose status may be compared
with the problem of glides in MGK palatalization). As in the case of [C'],
we must envisage the possible existence of phonemes or allophones of
consonantal phonemes having the form [n plus voiced C] or [ⁿ plus
voiced C].

Excluding from consideration [ⁿd] as an external sandhi phenomenon
(variant, cf. 3.3, 5.6, 7.425), we have to deal with the following possible
phonemes : [t], [d], [nt], [nd], [n], and analogically in the other series of
stops with : [k], [g], [ŋk], [ŋg], [ŋ], and [p], [b], [mp], [mb], [m].

8.2 By the method we used in palatalization (cf. II.4) we search for
possible allophones among [t], [d], [nt], [nd], [n]. We find possible phoneme
units as follows :

1) /t/, /d/, /nt/, /nd/, /n/. Cf. 3.2.

2) with two allophones :

/t~d/ cf. 3.3,5.5. Neutralization.

/d~nt/ cf. 5.32.

/d~nd/ cf. 5.31.

/nt~nd/ cf. 5.33.

/d~n/ cf. 5.5 ([tsibúri]? = [tsimúri])

3) with three allophones :

/d~nt~nd/ cf. 5.4.

8.3 All allophones in 8.2, except [t] and [d], being in free variation and not in complementary distribution (cf. 3.2; II.4.12), we obtain as a final result eight phonemes : /t/, /d/, /n/; /p/, /b/, /m/; /k/, /g/ (neutralization of /n/ - /m/ before labials (>[mb]), and of /t/ - /d/ etc. after nasals (>[nd] etc.) with the exception of F words (cf. also 7.423; V.), [n] is an allophone of /n/ before velars, and [nt], [nd] etc. are further analysed as sequences of two phonemes, e.g. [pánko] - [páno] - [páko], cf. 3.2; V.9, VI.2).

9. C o n c l u s i o n.

The phonemic system of MGK includes the phonemes /p, b, t, d, k, g/, which form with the nasal phonemes /m, n/ the clusters /mp, mb, nt, nd, nk, ng/, with a distribution as in 4. (cf. Householder, 1964, 24). There is medially a great deal of variation between voiced stops and corresponding nasal clusters, which is either free or put to uses more or less fixed as to their informational load (cases in 7.412 contain examples socially inferior or exotic, while those in 7.413 are often a rehabilitating use of 7.412 and other marginal or fantastic variants (7.414, 7.415) for the purpose of obtaining stylistic effects in speech (cf. 7.424) and emphasis (cf. 7.425)). This results in some cases of uncertainty concerning rare or special vocabulary items (foreign words, especially of recent origin, have no standard pronunciation, this being conditioned by social factors). This multitude of possible forms is a by-product and a characteristic of the lexically not standardized structure of MGK (cf. 1.4). The context of situation is a clue to the interpretation of a variant and sometimes a variant is a clue to the speaker's attitude to the situation. The general tendency to open syllables in MGK works considerably towards the simplification of nasal clusters (evolution towards initial mutations in certain syntagms, e.g. [to pirázi] - [to birázi] = [tom birázi] or [to mbirázi]).

V. THE AFFRICATES OF MODERN GREEK *KOINE*

1. The problem of affricates (ts, dz) in MGK phonology.

This is a case of the common problem in phonological analysis concerning the adoption of one or two phonemes (cf. III., IV., VI.2). The affricates of MGK ([ts] and [dz]) do not come, as it is well known, from AG, but are an offspring of the evolution the Greek language underwent during the great span of time from postclassic to modern times (10th century), and of the foreign influences that came to act upon it. Their appearance must be assigned to different times and there is no doubt that their phonological adaptation (especially concerning [dz]) has not yet been concluded (cf. Mirambel, 1950, 66-7). Nevertheless, derivation morphemes with [ts] and [dz] (cf. 4.3) make necessary their consideration in the phonological analysis of MGK (they cannot be wholly assimilated to F sounds met in F words of infrequent use).

2. Phonetic facts.

Greek speakers distinguish clearly between [ts] and [dz], because certain words are only spoken with the one or the other, without any possible interchange of the two (cf. 3.1). On the other hand, there are many cases where variants are possible, classified into different categories according to the point of examination (cf. IV.5,.7.4).

3. W o r d   s t r a t a   a c c o r d i n g   t o   p r o n u n c i a t i o n
i n   M G K.

3.1 No double pronunciation possible :

1) [ts], e.g. [-útsikos], [-ítsa], [ts-] (some exceptions), [katsáða], [vítsa], [átsalos], [vúrtsa], [kátse], [kamtsík'i] etc.

2) [dz], e.g. [-dzíðiko], [-dzís] (but cf. [kaiktsís], [buzuktsís]), [dz-] (cf. [ts-]), [adzamís], [kodzám], [flidzáni], [ɣaléndza], [brídz] etc.

3.2 Minimal pairs (cf. Mirambel, 1950, 63) :

Rare : [tsíros] - [dzíros], [tsíp] - [dzíp], [lútsa] - [lúdza]

Dubious : [romántsa] - [romándza], [rántso] - [rándzo], [tsámi] - [dzámi]. Cf. [tsápa] - [dzába].

3.3 Two variants (cf. 3.5) :

3.31 [nts] or [ndz], e.g. [reverántsa] = [reverándza], [ɣántsos] = [ɣándzos], [kontsína] = [kondzína], [pasιéntsa] = [pasιéndza] etc.

3.32 [ndz] or [dz], e.g. [brúndzinos] = [brúdziṅos], [γlendzés] = [γledzés], [xandzára] = [xadzára], [mandzurána] = [madzurána] etc.

3.33 [ts] or [dz], e.g. [batsák'ṭa] = [badzák'ṭa], [tsiéri] = [dziéri], [kalaitsís] = [kalaidzís], [kotsábasis] = [kodzábasis] etc.

3.4 Three variants :

[nts] or [ndz] or [dz], e.g. [frantsóla] = [frandzóla] = [fradzóla], [antsúγ'ṭa] = [andzúγ'ṭa] = [adzúγ'ṭa] etc. (cf. 3.5)

3.5 Prevalent vs. possible.

Direction of change : [ndz]→[dz/nts]→[ts]. Cf. 3.3, 3.4, voicing, tendency to open syllables, L influence.

3.6 L vs. D : [venzína] - [vendzína], [pizámes] - [pidzámes] etc.

3.7 Foreignisms :

[tšék] = [tsék] (tš, dž are impossible in MGK proper, and when heard they carry the imprint of F origin).

3.8 Sentence vs. word sandhi (cf. 7.) :

[-n≠ts-]⟩[ndz] vs. [-n + ts-] sometimes in words, e.g. [kantsonéta]

4. W o r d s t r a t a a c c o r d i n g t o o r i g i n (and/or adaptation to the system of MGK).

4.1 AG (rare) with some postclassic words (cf. AED) :

1) [ts], e.g. [átsalos], [atsíδa], [étsi], [kátse], [kutsós], [tsekúri], [tsíkna], [tsimbó], [tsúzo], [tsuxterós] etc.

2) [dz], e.g. [mundzúra], [skandzóx'iros], [dzídzikas] etc. (fewer).

4.2 Loanwords from different languages and times (cf. Triantaphyllides, 1938, § 39, § 50; 1941, 91-8). All instances other than 4.1 :

medieval : Venet. [káltsa], [katsaróla], [petsí], Ital. [nerándzi], Slav. [kotétsi], [tsélingas] etc.

modern: Turk. [papútsi], [dzák'i], [-dzís] etc.; [sánduits], [tsái], [pl'ṭátsiko] etc.

d technical terms : [kartútso], [parténdza], [katsúla] etc.

4.3 Derivation suffixes and composition features.

Both are productive and belong to a popular style (cf. 5.). Ex.

Diminutives : [-ítsa], [-útsikos], e.g. [γatítsa], [kalútsikos) etc.

Professions : [-(i)dzís], e.g. [vṭolidzís], [kavγadzís] etc.

Workshops etc. : [-dzíδiko], e.g. [patsadzíδiko], [lustradzíδiko] etc.

Proper names : [-útsos], e.g. [Andrútsos] (cf. Jannaris, 1897, 294)

[-átsa] : [linátsa], [k'erátsa]

Composition : [kutso-], [a-] + [ts-]

4.4 Grammatically unadapted foreign words :

[erzáts], [dútse], [sk'éts], [sórts], [tsék], [máts] etc.

[adzém-], [mánadzer], [brídz], [dzáz], [dzíp] etc.

but cf. [tsitsíδi], [tsíma tsíma] of Greek origin (cf. AED).

5. Word strata according to subsystems in MGK.

5.1 Ordinary vocabulary :

[-ítsa], [-útsikos] (cf. 4.3), [tsak'ízo], [vúrtsa], [flidzáni] etc.

5.2 Lower (or *d*) vocabulary (cf. also 5.31) :

[klapatsímbala], [kotsáro], [tsatíla], [tsílikos], [tsíma tsíma], [tsúla], [fórtsa], [tsanák'i], [lútsa], [pítsikos], [máts múts] etc.

[-dzís],[-dzíδiko] (cf. 4.3), [kodzám], [adzamís], [dzóγos], [xardzilík'i], [dzífos], [badzanák'is], [dziridzáňdzules] etc.

5.3 Technical terms (belonging to one of the following categories or to both of them, e.g. [kaputsínos]) :

1) *d* (cf. 4.2), e.g. [vutsí], [bratséra], [katsabrókos], [klapátsa], [órtsa], [dóltso], [tsimisíri], [fil'ιótsos] etc. ; [k'emendzés], [dzavéla], [madzúni], [kontramedzána], [kavadzárizma] etc.

2) F (L or D, cf. 4.2, 4.4), e.g. [kautsúk], [kantsonéta], [tsárevits], [tselebís], [faltséta], [kontsérto] etc. ; [influéndza], [lindzárizma], [dzéndleman], [dzók'ei], [adzénda] etc.

5.4 Variants.

5.41 Faithfulness to F phonetism (cf. 3.7) :

[tšéri], [sotovótše], [džáz], [mánadžer] etc.

5.42 Devious phonetism (diverging from standard forms of MGK) :

1) FL→D, e.g. [tsék'i]

2) other (more or less *d*) forms besides the MGK one, e.g. [tsimbúri], [k'emandzés] etc.

3) L vs. D formations (cf. 3.6), e.g. [sokoláta] - [tsokoláta], [zelatína] - [dzelatína], [venzíni] - [vendzína] etc.

5.43 Double possible forms (cf. 3.2, 3.4, 3.6) :

[íntsa] = [índza], [zarzavatsís] = [zarzavadzís]

5.44 Affective connotations (cf. II.2.713; III.3.1.1.13., IV.7.424) :

L coloring : [tsámpa], [kontsám]

d coloring : [γlikúdzikos]

5.5 Emphatic pronunciation (cf. IV.7.425), e.g. [ⁿdzereméδes]

5.6 Uncertain phonetism (cf. 3.31).

6. Word strata according to distribution in word structure. Cf. Householder, 1964, 18-9.

6.1 Derivation suffixes, e.g. [-ítsa], [-dzís] etc. (cf. 4.3).

6.2 [ts] initially as well as medially.

6.3 [dz] mostly initially, and medially after [n].

6.4 Few final clusters (cf. 4.4) :

[máts], [brídz], [káts], [pláts plúts] etc.

6.5 Consonantal clusters with [ts] and [dz] medially :

[n (rare), m, r, l, p, f, k] + [ts]

[n (frequent), m, r]   + [dz]

6.6 Repetition :

[tsítsiðos], [tsatsára],[tsitsírizma], [tsárevits]; [dziridzándzules],[dzí-dzikas], [dzabadzís]; āmreðita : [kútsa kútsa], [tsíta tsíta]

6.7 Coexistence :

6.71 of [ts] and [dz] is rare, except possibly in composition (e.g. [ártsi -
-búrdzi], [kutso-γlendzés]), e.g. [patsadzíðiko], [tsorbadzís] (distribution
between lexeme and grammatical morpheme)

6.72 of [ts] or [dz] with other clusters, e.g.[tsúksimo],[kseγándzoma]

6.8 Statistical data (cf. RGLDh, 1964, 7) :

6.81 Words with [ts] or [dz] in *Antilexicon* or in KRD (cf. IV.4.8) :

[ts] 607 : [ts-] 257, [-n + ts-] 13, [-tsís] 2, [-ítsa] 230 (KRD), [-útsikos]
67 (KRD), [-átsa] 2 (KRD), [-útsos]?, [-ts] 8 (KRD)

[dz] 177 : [dz-] 47, [-n + dz-] 86, [-dz(-)] 53 (KRD 1), [-dzís] 47 (KRD
43), [-dzíðiko] 4, (KRD 11)

6.82 [ts] and [dz] in a text of MGK (*Nea Estia* 79, 1098-1105) :

[ts-] 8, [-ts-] 15, [-ts] 1; [dz-] 2, [-dz-] 3

7. S a n d h i.

7.1 Sonorization after [n] (cf. 8.3, IV.3.3) :

[-n╫ts-]⟩[-n╫dz-]; [-n╫dz-]⟩[-Ø╫dz-/-n╫dz-]

To its influence is due the lack of distinction between [nts], [ndz],
[ts], and [dz] ([n] + [ts] or [dz] initially and medially) in many doubtful
cases of variant pronunciation in MGK (with no difference of meaning in
e.g. [malafrántsa] = [malafrándza]).

7.2 Simplification of consonantal clusters or syllables (cf. 3.5; IV.5.6):

[tin tsépi]⟩[tin dzépi]⟩[ti ndzépi]⟩[ti dzépi]

8. C o m p a r i s o n   b e t w e e n   p a r a l l e l   c l u s t e r s ([ts] -
[ps] - [ks] etc. Cf. Newton, 1961, 184; Householder, 1964, 18).

8.1 [káθome] - [ékatsa] as [γráfo] - [éγrapsa], [víxo] - [éviksa], [kó-
vo] - [ékopsa], [alméγo] - [álmeksa] (but cf. Householder : "the unique
word [kátse]", [mazévo] - [émasa], [áfise]⟩[áse], [káθisa])

8.2 [ts] and [dz] occur in suffixes (but see origin, 4.), [ks] and [ps]
never (morph-boundary before /s/). But cf. (riksιá], [xapsιá], where the
morph-boundary falls before [-ιá] (or should we accept a suffix [-sιá], e.g.
[armatosιá], [perpatisιá], [foresιá]?), or [patimasιá] vs.[ðaŋgomatιá], and
also [-simo], [-si]. Morphological segmentation can be done in different
ways (cf. II.1.44). See for instance different types of verbal stems + [-ιá] :

[xtipịá], [tsimbịá] etc. vs. [rufiksịá], [klepsịá] etć. Cf. also [terịasịá] = [terịaksịá], [piðisịá] = [piðiksịá].

The absence of a morph-boundary between [t] and [s] in [ts], [d] and [z] in [dz] may contribute to the native speaker's impression that they form a phoneme unit (in addition to a F word coloring).

8.3 /ps/ and /ks/ occur in the same positions as [ts] (except morph-boundaries), but [bz] and [gz] do not (except under certain conditions of external sandhi or in compound L words as variants, e.g. [palímbzisto], [égzema]). [bz] and [gz] do not occur in AG words like /ks/ and /ps/, and moreover they do not exist in loanwords of MGK. We find [tim bzíra] vs. [γampsós] and not [γambzós], because the last word is a L word and a [bz] might be interpreted as a boundary marker (or word juncture), as all such instances belong to sandhi.

8.4 [ts] and [dz] occur in one environment where clusters seem to be clearly foreign to the Greek pattern, i.e. initially at both the first and the second syllable of a word, particularly when the vowels are the same (cf. Householder, 1964, 19). This pattern (#CV(r)+CV-) is found with /p/, /k/, /b/, /d/, [ts], [dz], and a few examples with /t/, /g/, but cf. [psipsína], [ksé-ksaspros], [psipsírizma], [γriγrí], [trítriplos], [Kliklís] and similar words having in MGK an onomatopoeic, alliterative, playful, or low language status (cf. [krákrá]). Repetition exists also in other combinations, e.g. [tútu], [titívizma], [turtúrizma], [tártara] etc., or in composition, e.g. [propróksenos], [própròpapos], and some idiomatic expressions, e.g. [ti ksórk'izma k'e kseksórk'izma!] (but forms like *[ksekséro] do not exist, maybe because they could be interpreted as stammering).

8.5 [dz] could be interpreted as [tz] or [ds], but there is no morph-boundary between [d] and [z] in words containing it in MGK. Cf. 9.32.

9. D i s c u s s i o n.

9.1 Minimal pairs, where [ts] and [dz] contrast, are rare, dubious, or F loanwords (cf. 3.2). It could also be held that we have a contrast of unit phonemes, /ṭ/ to /dz/, in them.

9.2 The phonetic status of [bz] and [gz] does not correspond to that of [dz] (cf. 8.3), except perhaps in composition and surely in sandhi (the rules of composition are similar to the rules of external sandhi, except in cases of L phonetic influence, cf. 3.6, 5.423)

9.3 Analysis. Cf. Troubetzkoy, 1949, 57-66; Martinet, 1965, 111.

9.31 [ts] can be analysed in /t/+/s/ taking into consideration the following facts :

[psirízo]-[tsirízo]-[ksirízo] : /p/-/t/-/k/ (cf. 8.1; Troubetzkoy, 1949, 62); [tsípa]-[ksípa]-[trípa], [patsás]-[patás]-[pasás], [bátsi]-[báti]-

[bási], [pétses] - [pétres] - [Pérses] etc.

9.32 [dz] cannot be analysed in the same way, because only one segment in the possible sequences [tz] or [dz] or [ds] can commute, e.g.

[tzámi] - [trámi] : /z/ - /r/ (/t/ >[d] before voiced stop)
[tzífos] - [tífos]: /z/ - /t/
[dzíva] - [díva], [dzamotós] - [damotós] : /z/ - /d/
[dsák'i] - [sák'i] : /s/ - /d/ (/s/ >[z] after voiced stop, cf. 8.3).

9.4 Structural pressure. Cf. Pike, 1963, 128-138.

9.41 The unconspicuous predominant structural pattern of initial consonantal clusters in MGK is given by the formula [╫CCV+] (except [str-] etc.). If [ts] and [dz] are to be considered each as one consonant, then we should expect to find [ts] or [dz]+C+V, which is impossible (but cf. /m/, /n/, /r/, /l/, which also do not form such clusters).

9.42 [ts] is parallel to similar non-suspicious sequences, e.g. [ft], [st] etc., i.e. CC. The reverse sequence is also found in the same environment, e.g. [mútsos] - [mústos] (cf. Pike, 1963, 132). [dz] is then analysed like [ts] into two phonemes.

9.43 Word final patterns : [éks], [príts!], [brídz]

9.5 There is no other phonetic group (cluster) corresponding to [ts] and [dz], but not conforming to Troubetzkoy's rules I-III (1949, 57-60). A possible exception is [ékatsa], but there is no difference in pronunciation. Cf. to rule I the absence of a morph-boundary between [t] and [s], [d] (or [t]) and [z].

9.6 Distribution in syllabic structure (cf. 6.).

They occur initially in a syllable with the exception of F words, some of which are very common (cf. 4.2).

10. C o n c l u s i o n.

Although [dz] does not parallel [ts] in its distribution, and in spite of the fact that its character, more or less unadapted to the phonemic system of MGK (in addition to the cases of double (or multiple) possible pronunciation, uncertain phonetic forms, and affective connotation variants), causes a certain confusion, we can attain a more economical analysis of MGK phonology by avoiding the phonemicization of affricates. We recognize again in this case the dynamic nature of interference, when alien characteristics increasing in bulk help to change the system, by being gradually introduced into the former pattern, through the possibilities it offers of new phonemic interpretations (here the existence of /ţ/). Cf. Mirambel (1939, 22), Newton (1961, 184), Koutsoudas (1962, § 2.26) etc., and for the unit phoneme solution Triantaphyllides (1941, 31), Mirambel (1950, 66-7; 1959, 23), Householder (1964, 17-9) etc.

VI. GENERAL CONCLUSIONS

1. All problems discussed in the previous sections are held together by the more general one of syllabic structure, which runs through all of them in a greater or lesser degree.

Syllabic structure rules or tendencies play an important part in MGK morphophonemics and help to explain overlaps, double formations, variants of several degrees and functions, and marginal or unsystematic cases. Syllabic structure partakes of the general antinomy of MGK phonetism, brought about by L influence and to a smaller extent by F influence in recent times.

2. Another general characteristic of the problems examined in the previous chapters concerns segmentation of sound sequences into one or two phonemes (spurious diphthongs, nasal clusters, affricates). In addition to the principles and factors formulated by Troubetzkoy (1949, 57-66), Martinet (1965, 109-123), Pike (1963, 128-138), and others for such cases, we may be helped by the following indications pointing together to monophthongization : absence of any amount of free variation, and of syllabic boundary or morph-boundary between the assumed component elements (but cf. III.3.134; IV.7.4). Using exclusively Martinet's method we could analyse [d] as /nt/, and [aɪ] as /ai/ on the basis of the following commutations : [dáma] = [ntáma] - [táma] - [náma], [kaɪ-ménos] - [kaménos] - [kriménos], but there is found a sequence [nt] = [n+t] and no variation between [d] and [nt] or [kaɪménos] and *[ka+i-ménos]. Cf. the opposite cases in II.2.5; III.3.1.1.11. ([aetós] - [aɪtós]), .3.1.1.15.2 ([tróika] = [tróɪka]), .3.124, .3.144; IV.5.4; V.3.3, .3.4, .8.1.

3. The four "cruces" of the phonological analysis of MGK present us with problems which help us to get a closer to the facts and more accurate picture of the synchronic state of a language. We come across a system that is not absolutely stable, but shows a dynamic field of forces (sometimes antagonistic) searching for an equilibrium in a differently structured order, because analogical formations often overshoot their aims, as the speaker's linguistic sense of the structure of a formation or his symbolic reinterpretation and reevalution of a complex expression form may serve as a new start. A common language like MGK, incorpo-

rating the uses and subsystems of a greatly differentiated modern society, is in constant danger of instability and confusion, threatened by the divergence of variants. It offers the picture of a melting-pot, where interference from all possible points (L, F, d, technical, scientific, subcodes, social dialects etc.), reflecting social and individual forces at work, cross each other and are used whenever possible to convey more information in the process of communication. This is the reason why language is more homogeneous, undifferentiated ,and stable in small or separated communities, where the social structure is not complex.

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The following additional abbreviations (cf. p. 6) are used to note lexicological and grammatical features : acc. = accusative, adj. = adjective, adv. = adverb, aor. = aorist, arg. = argot, colloqu. = colloquial, dim. = diminutive, emph. = emphatic, excl. = exclamation, idiol. = idiolect, idiom. = idiomatic, imp. = imperative, impf. = imperfect, ind. = indeclinable, l.v. = lower vocabulary, nom. = nominative, num. = numeral, onom. = onomatopoeic, pass. = passive, PN = proper name, poet. = poetical, pop. = popular, pp. = past participle, prep. = preposition, pron. = pronoun, r. sp. = rapid speech, sandhi, sbst. = substandard, s. eff. = stylistic effects, subj. = subjunctive, techn. = technical term, vulg. = vulgar.

Sometimes a word sense points to grammatical analysis. All forms not characterized are D. Numbers refer to pages.

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k'írıe eléıson r. sp., 'Kyrie eleison'; 29

k'ıúng'i n., F d, 'aqueduct'; 33, 42, 43

kláb n. ind., FL, 'club'; 38, 40, 43

kláımata pl. of kláıma n., d, 'tears, cries'; 28

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kombársos m., FL, 'character man, extra'; 42

kombɤ'ázo colloqu., 'I hesitate, I hem and haw'; 13

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kómbos m. 'knot'; 37, 40

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kóntra adv., F pop., idiom. páo-'I am against'; 42

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kontramedzána f., F d, 'demijohn'; 48

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kontsína = kondzina f., F techn., 'card-play'; 46

kopí f., L, 'cutting'; 37

koprι̹á f. 'dung, manure'; 14

korakozóitos m. 'very old (like a crow)'; 29

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koroiδía = koroι̹δía f. 'mockery'; 29

koróiδo s. eff., see koróι̹δo; 29, 30

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kotsábasis = kodzá- m., F techn., 'notable (Turk.)'; 47

kotsáro arg., 'I hang, I attach'; 48

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krákrá onom. ind. 'cry of a bird'; 50

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kratái = kratáι̹ 3sg. of krató 'I hold'; 30

krema(n)dalás m., colloqu., 'tall, hulking fellow'; 41

kriménos m. pp. 'hidden'; 52

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ksan- cf. ksaná adv. 'again', e.g. ksanandámoma n. 'new meeting'; 38

ksebléksimo n., colloqu., 'disembroilment'; 40

kseγándzoma n. 'unhooking'; 49

kséfando n. 'clearing (in a forest)'; 40

kséksaspros m., idiom., 'very white'; 50

*ksekséro 'I lose knowledge'; 50

ksen'ι̹asι̹á f. 'carelessness, lightheartedness'; 33

ksípa idiom. in ípa - 'I promised and I revoked my words'; 50

ksirízo 'I shave'; 50

ksistrι̹á 'currying (f. sg.); currycombs (n. pl.)'; 14

kumbí n. 'button'; 42

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láθ^x'ι̹a pop. pl. of láθos n. 'error, mistake'; 16

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laι̹δá d for laδι̹á f. 'oil-stain'; 28

laikós m. 'popular; secular'; 29

láitmotìv n. ind., FL, 'leitmotiv'; 29, 30

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levandínos m., FL, 'Levantine'; 42
levántes m., F d, 'east wind; East'; 43
liγóιmeros m., d, 'short-lived, ephemeral'; 28, 29
*l'ιéno for liéno L, 'I smooth, I polish'; 15
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lízγos m., L, 'spade, mattock'; 15
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lustradzíδiko n., F pop., 'shoeblack's shop'; 47
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madára pop., idiom. tá ékane - 'he made a mess of it'; 37, 43
madzúni n., F pop., 'tonic, fruit paste'; 48
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maιdanós m., F ⟨ Greek, 'parsley'; 28
máιδe d, 'neither'; 28
maιmú f., ⟨ ?, 'monkey'; 28
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mángas m., F pop., 'rowdy, tough, cad; smart'; 40, 42
mang'ιés pl. of mang'ιá f., F, 'act of a mángas'; 13
mangúra f., pop., 'heavy stick'; 43
manuáli n., F, 'large church candlestick'; 27, 29
matára f. 'big eye'; 37
máts n. ind., F, 'match'; 12, 47, 49
máts múts onom., pop., 'kisses'; 48
matˣ'ιés pl. of matιá f. 'glance'; 13
mavrodiménos m. 'dressed in black'; 40
mazévo 'I gather'; 49
ᵐbés epitélus emph., 'move on and come in now!'; 44
ᵐbík'e emph. for bík'e 3sg. aor. 'entered'; 37
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nános m. 'dwarf'; 38
na vrí kanísk'i pop., 'that he finds a small
  basket as a present'; 14
na vrikan ísk'ῃi 'that ghosts would have
  found'; 14
ⁿdíni emph. 3sg. of díno; 37
ⁿdísu ípa emph., 'I told you to put on your
  clothes'; 41
ⁿdropí acc. sg. of dropí f. 'shame'; 37
ⁿdzereméδes emph. for dz- m. pl., F pop.,
  'damage'; 48
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neraῃδογ'eniménos m. 'fairy-born'; 29
néraῃδos m., d, 'fairy, sprite'; 29
nerándzi n., F, 'bitter orange'; 47
ⁿgarδῃakós emph. for garδῃakós; 37
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  same'; 28, 31
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ómi pl. of ómos m. 'shoulder'; 14
ómii pl. of ómios m. 'alike, similar'; 14
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-ondan ending of 3pl. impf. pass.; 38
-ondas ending of gerund; 38
-onde ending of 3pl. present pass.; 38
-ondos ending of g. sg.; 38
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órtsa excl., F techn., 'luff'; 48
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  let'; 28
páῃ k'aftós na δí 'he too goes to see'; 28
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pái na δí tí éγ'ine 'goes to see what hap-
  pened'; 28
páῃ pῃá 'it's gone for ever; he is already
  dead'; 28
páko n., F, 'deck (of cards)'; 45
palángo n., F ⟨ AG, techn., 'tactale'; 43
páli adv. 'again'; 37
pal'ῃámbelo n., colloqu., idiom. pái k'e to
  - 'everything is spent'; 33
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  'palimsest'; 50
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pánda adv. 'always'; 37
pandrῃá f., pop., 'marriage'; 14
paní n. 'cloth; sail'; 13
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pánko acc. sg. of pánkos m., F, 'work
  bench, stand'; 45
páno adv. 'on top, up, above'; 45
pansión f. ind., FL, 'pension, boarding
  house'; 29
papútsi n., F, 'shoe'; 47
parempiptóndos adv.,L, 'incidentally'; 39
parlaménto n., pop., 'parliament'; 42
parténdza f., pop., 'setting sail, departu-
  re'; 47
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pasás m., F, 'pasha'; 50
pasῃéntsa = -ndza f., F, 'patience (cards)';
  46
páta 2sg. imp. of pató 'I tread on; I press';
  37
patás 2sg. of pató, see páta; 50
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patirdí n. ind., F pop., 'noise, row'; 43
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  sold'; 47, 49
patsás m., F, 'sheep's trotters'; 50
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  last cent'; 44
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peðolói = peðolóγ'i n.,pop., 'swarm of children'; 29

pénde num. 'five'; 37

pénes pl. of péna f., F, 'pen'; 34

penínda num. 'fifty'; 34

perísfιnksi f., L, 'clasp, binding'; 42

permanánd n. ind., F techn., 'permanent wave'; 38

perpatisι̯á f., colloqu.,'way of walking'; 49

Pérses m. pl. 'Persians'; 51

pés 2sg. aor. imp. 'say, tell!'; 34

petá 3sg. of petó 'I fly'; 30

petái 3sg. of petáo colloqu., 'I fly'; 30

petάι̯okókoras r. sp., 'the cock flies (game)'; 30

pétres pl. of pétra f. 'stone'; 51

petrι̯á f. 'blow with a stone'; 14

pétses pl. of pétsa f., F colloqu., 'skin, cover'; 51

petsí n., F colloqu., 'skin; leather'; 47

pι̯á f. sg. 'who?'; pl. of pι̯ó; adv. 'already'; 34

pι̯áno n., F, 'piano'; 34

pι̯ás g. sg. of pι̯á f.; 34

piðisι̯á = piðiksι̯á f., pop., 'a jump, leap'; 50

pι̯énes f. pl., F colloqu., 'a good house (theater)'; 34

pι̯és 1) f. pl. of pι̯á, 2) 2sg. aor. imp. of píno; 34

píι̯ma r. sp. for píima n., L, 'poem'; 28

píni 3sg. of píno; 34

pínk pónk n. ind., F,'ping pong'; 34,38,39

píno 'I drink'; 34

pió n., L, 'quality, nature'; 10, 26

pι̯ó n. pron. 'which?'; 10, 34

pι̯óni n., FL, 'pawn'; 34

pι̯ós m. pron. 'who?'; 34

pís 2sg. aor. subj. 'that you say'; 34

pítsikos m., F vulg., 'bastard'; 48

pι̯ús acc. pl. of pι̯ós; 34

pizámes L = pidz- pl. of pidzáma f., F, 'pyjamas'; 47

plainós m. 'neighboring, contiguous'; 29

pláts plúts colloqu., onom. of 'stepping on flooded ground'; 49

pl'ι̯átsiko n., F pop., 'booty'; 47

pliθindikós m., L, 'plural'; 44

póði n. 'foot, leg'; 11

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pogróm n. ind., FL, 'pogrom'; 43

pombé n. ind., FL, 'bombé hat'; 43

pórta f., F, 'door'; 41

pós adv. 'how?'; 34

pótes pl. of pótis m., L, 'drinker'; 40

príts excl. of mockery; 51

próimos m., L, 'premature, early'; 29

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proinó n., colloqu., 'breakfast; morning'; 31

proión n., L, 'product'; 12

proipóθesi f., L, 'presupposition'; 29

propróksenos m., L, 'ex-consul'; 50

própròpapos m., L, 'great great grandfather'; 50

prosen- prep. = pros-en- L, e.g. prosendáso 'I inclose also'; 38

psári n. 'fish'; 10

psárι̯a pl. of psári; 10

psarι̯á f., pop., 'catch of fish'; 10

psipsína f., colloqu., 'kitten'; 50

psipsírizma n., l. v., 'scrutinizing, subtilizing'; 50

psirízo 'I louse; I subtilize (l.v.)'; 50

pú adv. 'where?'; 34

pudínga f., FL, 'pudding'; 39

pú ι̯tan r. sp., 'where was (he)?'; 28

puliá s. eff., see pul'ι̯á; 15

pul'ι̯á pl. of pulí n. 'bird'; 15

púnda colloqu. = pú íne aftá? 'where are they?'; 40

pundγ'ι̯ázo F 'I freeze, I become chilled'; 13

pung'í n., F, pop., 'purse, money-bag'; 40

púnta f., F colloqu., 'a bad cold'; 40

purgatório n., FL, 'purgatory'; 42

purnó n., d, see proinó (2); 31

pу̯ úte = p'úte or pú'te r. sp., 'that neither'; 27

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ti dáksi see tin dáksi; 36

tífos m., L, 'typhus'; 51

tí ksórk'izma k'e kseksórk'izma etc. idiom., colloqu., 'what charm and I don't know what !' etc.; 50

tim bórta acc. sg. of (i) pórta; 41

tim bzíra acc. sg. of i psíra f. 'the louse';50

tímvos m., L, 'tomb'; 42

tin dáksi acc. sg. of (i) táksi f. 'order; class'; 36

tin dzépi = ti dzépi, see tin tsépi; 49

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titívizma n., onom., 'chirping'; 50

to aeropláno n. 'the airplane'; 28

to áfisa = t'áfisa aor. 'I left it'; 27

to birázi see tom birázi; 45

to γ'atró acc. sg. of (o) γ'atrós; 15

to ₁θáki = to θ₁áki d for i Iθák'i f. 'I- thaca'; 28

tó ₁xa = tó'xa, r. sp., impf. 'I had it'; 28, 31

tom birázi = /ton pirázi/ 'disturbs, teases him'; 45

to pirázi = /to pirázi/ 'disturbs, teases it'; 45

tóra adv. 'now'; 37

trámi sbst. for trám n., F, 'tram'; 51

tramvaγ'éris m., F pop., 'tramway dri- ver'; 13

tramvái n., F pop., 'tramway'; 13, 29

triánda num. 'thirty'; 14, 33

trípa f. 'hole'; 50

trítriplos m. 'three times triple'; 50

tróika = tró₁ka f., FL techn., 'troika'; 29, 52

trólei n. ind., F, 'trolley-bus'; 29

tropí f., L, 'turn, alteration; change'; 37

trós ⟨ tró(γ')is 2sg. 'you eat'; 28

ts- beginning of words; 46, 47, 49

tsáγ'a pl. of tsái; 13

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tsái n., F, 'tea'; 13, 23, 29, 47

tsak'ízo colloqu., 'I break, I shatter'; 48

tsámi n., F d, 'fir'; 46

tsámpa s. eff., see dzába; 48

tsanák'i n., F ⟨ AG, pop., 'dish, plate'; 48

tsápa f., F, 'spade, pick-axe'; 46

tsárevits m. ind., FL, 'tsarevitch'; 48, 49

tsatíla f., F colloqu., 'wrathful indigna- tion, sulks'; 48

tsatsára f., F pop., 'comb with large teeth'; 49

tsék n. ind., F, 'cheque'; 47

tšék F phonetism, see tsék; 47

tsék'i n., pop., see tsék; 48

tsekúri n., F, 'axe'; 47

tselebís m., F techn., 'Turk. nobleman'; 48

tséli*n*gas m., F pop., 'chief shepherd'; 47

tšéri = tséri n. ind., FL, 'cherry'; 48

tsibúri see tsimbúri; 41, 45

tsiéri = dzi- n., F pop., 'liver'; 47

tsíkna f., colloqu., 'smell of burning'; 47

tsílikos m., F colloqu., 'brand new, glos- sy'; 48

tsíma tsíma adv., colloqu., 'to the brink, to the very end'; 48

tsimb₁á f., colloqu., 'a pinch'; 50

tsimbó 'I pinch'; 47

tsimbúri see tsimúri; 41, 48

tsimisíri n., F d, 'box-tree'; 48

tsimúri n., pop., 'a tick'; 41, 45

tsíp n. ind., F techn., 'chip (cards)'; 46

tsípa f., pop., 'membrane; shame'; 50

tsirízo colloqu., 'I scream'; 50

tsíros m., 'small, dried mackerel; very thin'; 46

-tsís see -dzís; 49

tsíta tsíta adv., pop., 'with difficulty'; 49

tsitsíδi adv., colloqu., 'stark naked'; 48

tsítsiδos m., colloqu., 'stark naked'; 49

tsitsírizma n., colloqu., 'crackling'; 49

tsokoláta sbst., see sokoláta; 48

tsorbadzís m., F techn., 'notable'; 49

tsúksimo n., colloqu.,'pungent pain, smar- ting'; 49

tsúla f., colloqu., 'hussy'; 48

tsuxterós m. 'acrid, pungent; bitter (cold)'; 47

tsúzo colloqu., 'to smart; I tipple'; 47

tʊ áfisa 'I left for him'; 27

tʊ éδosa 'I gave him'; 27

tʊ ípa 'I told him'; 27

tʊ órgosa 'I tilled, I plowed for him'; 27

turtúrizma n., colloqu., 'shiver'; 50
tútu g. sg. of tútos m. 'this here'; 50
tuz γ′atrús acc. pl. of (o) γ′atrós; 14
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uísk′i n., F, 'whisky'; 27
-undan ending of 3pl. impf. pass.; 38
-unde ending of 3pl. present pass.; 38
-útsikos dim. adj. suffix; 46, 47, 48, 49
-útsos m. PN suffix; 47, 49

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vaθ̩í pl. of vaθís m., see vaθí; 13
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vá̩ pop., excl. of surprise or regret; 28
vále apo = vál' apo 'put (in) from -'; 14
vámp f., FL, 'vamp'; 38
varγ′̩á 1) f. 'heavy; big hammer', 2) adj.
    n. pl., 3) adv.; 13
var̩ése 2sg. pass. 'you are bored'; 34
varúse 3sg. impf., colloqu., 'hit, struck';
    34
vázome 1pl. 'we put, we place'; 34
vγázo 'I take out'; 17
vγázome 1pl. of vγázo; 15, 17, 18
vγ′éni 3sg. 'goes out'; 13
vγ′ís 2sg. of vγó; 15
vγó aor. subj. 'that I go out'; 15
vedéta f., FL, 'headliner (actress)'; 37
vendéta f., F, 'vendetta'; 37
venzína f., L = vendz- pop., F, 'gasoline,
    petrol'; 47, 48
veránda f., F, 'veranda'; 40
verbalizmós m., FL, 'verbalism'; 42
viázo L, 'I force, I compel'; 17
viázome 1pl. of viázo; 14, 23
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    17, 18, 23, 34
V̩éni f. 'Vienna'; 13
v̩olí n., F, 'violin'; 13
v̩olidzís m., F pop., 'violinist'; 47
víos m., L, 'life'; 14
v̩ós n., pop., 'wealth, property, fortune';
    14
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víxo 'I cough'; 49

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vó̩δ̩a pl. of vó̩δi; 31
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vuízo 'I buzz, I rustle, I hum'; 27
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xaδ̩áris m. 'who likes to be caressed'; 31
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    48
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29
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