also were affected.[17]) The important thing to note, however, is that the same rule in the same formulation remains in both languages. It seems a clearly economical hypothesis to allow a single rule to have originated at a single time and to have operated on two (neighboring) dialects of a single linguistic system. The alternative, of course, is to assume two nearly identical rules which arose independently in two widely different areas of the world.[18])

The Transformation of a Natural Accent System: The Case of the Ancient Greek Enclitics
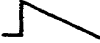
By D. Gary Miller, University of Florida

A functional interpretation of the history of the Greek accent shifts is offered and the shifts are related to final-syllable reduction in that these seemingly different processes serve to guarantee that no word will finish its contonation on the following word. A theory is proposed for the origin of Wheeler's and Vendryes' Laws. Forms like *ánthrōpos, lógos tis, lógōn,* and *lógōn ti(nōn)* are shown to have the same contonation because of a switch from mora sensitivity to syllable sensitivity motivated by such changes as Vendryes' Law. Originally accentuation in enclitic environments was predicted by the normal accent spread (contonation). But various changes that shifted the accent caused this system to break down and become rule-bound, necessitating several relatively strange rules for accentuation in enclitic contexts. This paper outlines the changes in the accent system that

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[17]) On Sanskrit and the complications introduced by Bartholomae's Law, cf. S. Anderson, "On Grassmann's Law in Sanskrit", *Linguistic Inquiry* 1 (1970) 387–396, and I. A. Sag, "The Grassmann's Law Pseudoparadox", *ibid.* 5 (1974) 591–607.

[18]) What caused the tendency to dissimilate aspiration is another question, one to which there can be no answer. One possibility is that the pronunciation of identical aspirated consonants in successive syllables caused articulatory discomfort. (Cf. Greek ὀφθαλμός ἐχθρός, but Σαπφώ Ατθίς Βάκχος and W. S. Allen, *Vox Graeca* 25 with n.4 [Cambridge, 1968]). Thus in reduplicating syllables the first aspiration may have been lost (without any diminution of information conveyed). From this narrow phonological environment the tendency, on this assumption, spread so as to include all aspirated sequences.

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produced accentuations like *haútē d'estín, lógōn tinõn, óphrá se*, etc., which
have no justification in terms of the original accent spread phenomenon, but
can be explained by various generalizations of rules and constraints.

I. Phonetic Preliminaries

1. Both Kiparsky (1967, 1973) and Allen (1966, 1968: 109–14,
1973: 234) have suggested, originally independently and working
from different points of view, that the contour of Greek words must
have looked something like ⌐\ rather than ⌐L. That is, the
fall after the high pitch was *gradual* rather than sharp. Thus *pheró-
menos* 'being carried' would be phonetically ⌐\ not ⌐L. The
downsloping contour is specifically mentioned by some ancient
grammarians. In his Treatise on Literary Composition Dionysius of
Halicarnassus affirms:

'. . . Of those [words] which have both [a low and a high tone], some have the
low combined with the high in one syllable, and these we call circumflex;
whereas others have *each of them on different syllables and maintaining their
own quality*. In disyllables there is no intermediate position between low and
high; but in polysyllables, of whatever length, there is a single syllable con-
taining the high tone amongst a plurality of low tones.'—(Allen 1968: 113;
bracketed inserts and emphasis my own: D.G.M.)

Dionysius is clearly talking about a distributed sloping pitch:
pherómenos ⌐\ , *ánthrōpos* ('man') ⌐\ . His 'plurality of low
tones' is the 'downslope' after the high pitch, something inter-
mediate between the high and the low, which obviously cannot
exist on a dissyllabic word. Aristotle and others also recognized a
'mid' tone (cf. Sturtevant 1940: 99ff.) which has been variously
interpreted (Vendryes, §§ 45, 51; Allen 1973: 253f), but falls right
into place in a contour system with a gradual downslope. For dis-
syllabic words Dionysius seems to be describing a contour of the
type *lógos* ('word') ⌐L. But more likely the contour was ⌐. What he
apparently means is that between the highest point and the lowest
there could be no intermediate level(s) of pitch. The gradual down-
slope is supported by enclitic formations, such as *lógos tis* 'some
word' where the downslope ('contonation')[1] is distributed onto the
enclitic: *lógos tis* (see below), and by evidence from ancient music.

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[1] Contonation will be defined after Allen (1968: 114; 1973: 234) as the
tone complex consisting of the high pitch and the falling pitch immediately
after it.

2. The interval and nature of the contonation is evident in musical compositions from Delphi (2nd cent. B.C.) and the epitaph of Sicilus (Aidin inscription, 2nd/1st cent. B.C.), reproduced here (relevant words underlined) from Allen (1968: 110, 1973: 233):

The rises and falls in the music follow the natural contour of the words. For paroxytones there is unambiguously *not* a complete downslope: *oligon* ('a little') ↗ *tò télos* ('the end') ↗ . The word *hólōs* ('wholly') is particularly instructive because of the 'plurality of mid tones': *hóloos*. This will be discussed in more detail later.

3. The most important phonological argument for our purposes here involves the loss of accented vowels. In Greek when an accented vowel is lost the vowel to the right receives the accent: /phil+é+ō/ → philṓ 'I love'. That the accent goes to the right is by no means necessary. Kiparsky (1973: 835) observes that in languages with a leftward accent spread, such as Lithuanian, the accent moves to the left when the accented vowel is lost, e.g. *kubil+ius* → kubìlius 'cooper'. In Lithuanian, unlike Greek, it is the syllables *before* the high pitch that contain redundant accents. We are dealing, then, not with an accent shift, but a phenomenon whereby when an accented vowel is lost, the secondary accent becomes primary. More precisely, in phonological terms, there is an accent spread in Greek which accents every mora to the right of the main accent (indicated by 1):

$$[\text{phil}+\overset{1}{\text{e}}+\text{oo}] \rightarrow [\text{phil}+\overset{1}{\text{e}}+\overset{11}{\text{oo}}] \;(\rightarrow [\text{phil}+\overset{11}{\text{oo}}])$$

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A late rule then 'bends' or lowers all consecutive [+hi][2] ('1') pitches to lower pitches (2, 3):[3]

$$\overset{1\ 1}{[\text{phil}+\text{oo}]} \rightarrow \overset{1\ 2}{[\text{phil}+\text{oo}]}$$

$$\overset{1\ \ 1\ \ 1}{[\text{pheromenos}]} \rightarrow \overset{1\ \ 2\ \ 3}{[\text{pheromenos}]}$$

Accent spread stops at a double word boundary but not at a single word boundary (i.e. spread continues over an enclitic sequence):

$$\overset{1}{\text{logos}} \#\overset{1\ \ 1}{\text{tis}} \rightarrow \overset{1}{\text{logos}} \#\overset{1\ \ 2}{\text{tis}} \rightarrow \overset{3}{\text{logos}} \#\text{tis} \text{ 'some word'}$$

$$\overset{1}{\text{theon}} \#\text{tina} \rightarrow \overset{1}{\text{theon}} \#\overset{1\ 1}{\text{tina}} \rightarrow \overset{1}{\text{theon}} \#\overset{2\ 3}{\text{tina}} \text{ 'some god' (a.s.)}$$

Additional evidence for the contonation pattern and the claim that accent spread in Greek stopped at the end of a word comes from the history of the Greek accent system as outlined by Kiparsky (1967). Combining that with the remarks by Allen (1968: 115f., 1973: 246) about the word being accentually more autonomous in Greek than in Vedic Sanskrit, it seems clear that the accent shifts to the left were part of a 'conspiracy' to prevent one word from carrying another's contonation.

II. The magic number 3 and early leftward displacement rules

4. Why should *lógos tis* be acceptable but not a.s. **lógon tina*? There are two ways of looking at this. First, there is a tendency to give 'complex' words (word plus enclitic) a complete stepdown contonation finishing at the end of the word:

$$\textit{lógos tis} \quad \overset{1\ \ 2\ \ \ \ 3}{[\text{logos}\#\text{tis}]}$$

$$\textit{dõrón estin} \quad \overset{12\ 1\ \ \ \ 2\ \ 3}{[\text{dooron}\#\text{esti(n)}]} \text{ 'it is a gift'}$$

$$\textit{phúlaká tina} \quad \overset{1\ 2\ 1\ \ \ 2\ 3}{[\text{phulaka}\#\text{tina}]} \text{ 'some guard' (a.s.)}$$

In this context the type *lógon tiná* [$\overset{1\ \ 2\ \ \ \ 3\ 1}{\text{logon}\#\text{tina}}$] 'some word' (a.s.) makes no sense at all unless contonation required two moras past the high pitch for completion (cf. Allen 1973: 236f.), and 'not more

[2] The feature of tone height will be written in rules as [+hi] rather than [+high] to prevent confusion with the longue height of vowels; i.e. [+hĭgh] designates a high vowel whereas [+hi] means that the vowel has a hi(gh) pitch.

[3] Sommerstein (1973: 122f.) disputes this analysis, but Miller (1975) shows that Sommerstein's formulation is a notational variant of Kiparsky's.

than one mora may follow the contonation' (Allen 1966: 13). This explains at once the acceptability of *lógos tis* and the impossibility of **lógon tina*. The possibility of **lógón tina* that would give the same final downslope as *phúlaká tina*, etc., was ruled out by an adjacent high pitch constraint, itself derivative of the late 'bending' phenomenon that lowered pitches after the main one (see below).

The second way to view the situation is that the obligatory *lógon tiná* in fact *proves* the adjacent high pitch constraint. Since there was a clear tendency to end a word (single or complex) with a complete downsloping contonation wherever possible, from the fact that we get *lógon tiná* instead of **lógón tina*, the only reasonable conclusion is that **lógón tina* was ruled out by a genuine constraint. There is also proof in *lógon tiná* that contonation required exactly three moras for completion.

5. This is reminiscent of the 'three-mora' condition for which Greek accentuation is famous. Compare the following Greek words with their Sanskrit cognates (cf. Vendryes, § 53):

<div style="text-align:center">

1 2 3

Skt. *bháramāṇaḥ* = Gk. *pherómenos* [pheromenos]

1 2 3

Skt. *bháramāṇasya* = Gk. *pheroménoio* [pheromenoyyo] (g.s.)

</div>

In contrast with Sanskrit which has no leftward limit on the occurrence of the accent, Greek has clearly innovated a pattern which gives each of these words the same contour. Regardless of the number of syllables at the beginning of the word the final stepdown from the hi pitch is completed at the end of any word over two syllables with 'recessive' accent. Again, why should this be the case unless contonation required exactly three moras?

The contour 123 indicated for *hólōs* in the musical text (2) is instructive for the downsloping contour of a long vowel, exactly what we should expect on the basis of systematic exigencies for words like—

<div style="text-align:center">

1 23

anthrópōn [anthroopoon] 'of men'

1 23

phulákōn [phulakoon] 'of guards'

</div>

—which have the same contonation as *pherómenos, pheroménoio* where the accent also falls three moras (counting vowel segments only) from the end.

6. The IE zero-grade retraction rule (Kiparsky 1973: 814; cf. Kuryłowicz 1958: 17–21, 1968: 30) was continued in Greek and

generalized as Wheeler's Law, a fact that seems not to have been noticed before. The inherited output of zero-grade retraction almost invariably had a dactylic sequence in Greek (cf. *patrási* 'to fathers', *andrási* 'to men'). Hence, by extension, other words of the same structure retracted their accent: **poikilós* (Skt. *peśalá-* 'decorated, beautiful') → *poikílos* 'variegated, painted', **agkulós* (cf. Skt. *aṅkurá-* 'bud, shoot') → *agkúlos* 'crooked, curved', **patro-ktonós* → *patro-któnos* 'murdering one's father', etc. (vs. *aigo-boskós* 'goat-herd', etc.) (cf. Vendryes, §§ 177f., 249).

Other rules that shifted the accent from the right produced a three-mora contonation, e.g. Bartoli's Law:[4])

$$\overset{1\ 2\ 3}{\text{Skt. }} duhitá = \text{Gk. } thugátēr \text{ [thugateer] 'daughter'}$$

$$\overset{1\ 23}{\text{*}nephelé} \rightarrow nephélē \text{ [nephelee] 'cloud'}$$

$$\overset{1\ 23}{\text{*}ergatés} \rightarrow ergátēs \text{ [ergatees] 'workman'}$$

This particular shift was restricted to anapaestic and cretic sequences (contrast *patér* 'father', *dotér* 'giver', *thēlé* 'nipple', *bouleutés* 'councillor, senator') and had a number of exceptions (Kiparsky 1967: 80), but there was another retraction rule that had no exceptions and produced the same contour, cf. the acc. sg. of *dotér* 'giver', *thér* 'wild beast', *guné* 'woman':

$$\overset{1\ 2}{\text{*}dotéra} \text{ [doteera]} \rightarrow \overset{1\ 2\ 3}{dot\tilde{e}ra} \text{ [doteera]}$$

$$\overset{1\ 2}{\text{*}théra} \text{ [theera]} \rightarrow \overset{12\ 3}{th\tilde{e}ra} \text{ [theera]}$$

$$gunaíka \text{ (so attested in Doric)} \rightarrow \overset{12\ 3}{gunaîka} \text{ [gunaika]}$$

For synchronic justification of this shift, cf. *phôs* 'man' beside *phôs* (< *pháos*) 'light', from which it follows that there is no rule to shift accents in the nominative. But since the accusative of both is *phôta*, one can easily deduce the appropriate rule:

N	phôs	phós
A	phôta	*phốta → phôta

7. After these shifting rules, any accent remaining on the last mora was reduced when an accented word followed, exactly as one might expect to complete the 'conspiracy' against allowing a word to finish its contonation on the following word. That the grave (`)

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[4]) For discussion and formulation of Bartoli's Law see Bartoli (1930) and Kiparsky (1967: 79f.).

accent represents a reduction in pitch goes back to Wackernagel (1893). For discussion and testimonies from the ancient grammarians see Vendryes (§ 35–43). The interrogative pronoun *tís, tí* 'who, what?' never has the acute written as a grave, which is an important exception. Looking at it another way, reduction rules are characteristic of pitch accent systems (McCawley 1968: 134, 140f., 177–9), and there would be no need to single out *tís, tí* for exceptional behavior if otherwise a hi pitch was not reduced in final position. An excellent argument has been adduced by Wackernagel (1893: 15f.; 1969: 1084f.); cf. Sommerstein (1973: 161): 'There is overwhelming evidence that proclitics were unaccented; and, especially seeing that most prepositions were not oxytone when they were accented independently, the ancient grammarians would never have regarded proclitics as oxytone, if there had not been something in the behaviour of real oxytones to mislead them. The only thing likely to do that would be for the real oxytones also to be sometimes unaccented.'

8. The environment for reduction is instructive. There is no reduction before an enclitic (obviously, because that could carry the word's contonation), and no reduction in pause position:

$$V \rightarrow [\text{-acc}] \, / \, \text{---} \, C_o \, \# \, \# \, [\text{+segment}]$$

theós # # agathós → *theòs agathós* 'a good god'

This shows that the conspiracy was not so much against final hi pitches as against hi pitches followed by a word containing an accent of its own. Allen (e.g. 1968: 115f.) observes that Greek developed a constraint against allowing an accented word to carry the stepdown from a final hi pitch of a preceding word (cf. Mouraviev 1972: 115, 119). The motivation for this constraint was at least twofold.

First, there was an incompleted conspiracy to allow words to have at least a partial fall after a hi pitch before their end. This was accomplished by the various leftward displacement rules (a similar conspiracy obtains in English; see Ross 1973). Second, there was a very definite constraint against hi pitches in adjacent syllables (§ 4), Greek requiring at least one degree of fall between hi's. These two facts interacted in final position. Oxytones by nature could not complete their contonation without distributing it onto a following word. When the following word was accented on the first syllable, the adjacent hi pitch constraint would be violated. This was pretty

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strong motivation for something to happen to that accent. To
complete the conspiracy the final accent had to go. Consequently the
accent reduction rule above was added to the grammar, first in
environments like *agathós phúlaks* (→ *agathòs phúlaks* 'a good
guard'), then generalized to any place an accented word followed,
regardless of where the accent was, thereby preventing any accented
word from carrying another's contonation.[5])

9. Another thing the shifts will account for is the rise of contour
('rising', 'falling') accents. Kiparsky (1973: 801ff.) shows that they
could not be due to the late contractions as Kuryłowicz (1958:128)
proposed nor to the 'analogy' before contraction assumed later by
Kuryłowicz (1968: 87–90), but attributes them to the accent rule.
However, this assumes a mora system in which 'presuffixal' accent
is assigned to the last (or only) mora of the stem in athematic nouns
(a.s. *pód+a*, Skt. *pắd+am* 'foot') and to the last (or only) mora of
the theme vowel in thematic nouns (a.s. *phugén* [phug+eê+n]
'flight'). Similarly, 'post-stem' accent is assigned to the first (or only)
mora of the case suffix in athematic nouns (g.s. *pod+ós*, Skt. *pad+ás*
'foot') and to the first (or only) mora of the theme vowel in thematic
nouns (g.s. *phugês* [phug+êe+s]).

Sanskrit differs from Greek in assigning accents to long vowels as
'units' rather than to their individual segments ('moras'). For in-
stance, there is a rule which retracts the accent in the vocative:
patér, Skt. *pitá* 'father' : voc. *páter*, Skt. *pítar*. A word like Gk. *Zeús*
'Zeus' has a voc. *Zeû* [zdêu] with a change in contour. But the
vocative of Skt. *vắk* 'speech' is simply *vák* with no change in contour.
The fact that Greek has a 'mora'-accent system must therefore be
motivated. An interesting correlation is that Greek had a number
of rules which shifted the accent what amounted to one mora to the
left. It is not inconceivable that these shifts may have made the
accentual system sensitive to moras. Then the inherited rules, when

_____

[5]) This was also Meillet's opinion (1905: 245f.), citing the parallel pheno-
menon in the Śatapatha Brāhmaṇa where a final hi pitch is reduced when the
first syllable of the following word is accented (cf. Allen 1973: 247). My
analysis differs from Meillet's in relating accent reduction also to the Greek
shifts rather than just assuming, as does Meillet (247f.), that pitch reduction
before accented syllables was inherited from IE and lost everywhere else
(including Vedic). Against Meillet one can argue that such a rule could have
been motivated at any time because of its naturalness in preventing adjacent
hi pitches (a very general constraint in Greek).

applied to a mora system, were responsible for the rise of contours. Sanskrit did not have the shifts and did not develop a mora-sensitive accent system with contours.

III. The history of enclitics

10. After the system was established in which accent spread with 'bending' could account for the enclitic sequences (§ 3), it was disrupted by a number of changes. One of these was Vendryes' Law (Vendryes, § 335), the latest of the shifts since it is still being carried out in the historical period, e.g. *geloîos → géloios* 'amusing', *erẽmos → érēmos* 'solitary, void', etc. Vendryes' Law did not shift categorially assigned accents, e.g. a.s. *dotẽra* (*dotér* 'giver'), *agõna* (*agốn* 'contest'); n.s. *didoûsa* /di+dónt+sa/ 'giving' (fem. of *didoús*, g.s. *didóntos*), etc. Contrary to Vendryes and Kiparsky (1967: 80f.) Vendryes' Law was not an Attic innovation. Nowhere is there any trace of a noun like **anthrõpos* (only *ánthrōpos* 'man', *heúrēma* 'invention', *pó(i)ēma* 'poem', *óneiros* 'dream', *kéleuthos* 'path, journey', etc.), which suggests that Vendryes' Law was earlier and that the Attic innovation consisted of allowing the normal accent rule for ×–◡ sequences to apply to a group of adjectives previously marked for special accentuation (a similar conclusion has been arrived at independently by Voyles 1974: 73).

This is not to imply that *ánthrōpos*, etc., were actually pronounced **anthrõpos* at any time. One can only speculate that this is probable. The evidence is good that Greek once had a stricter three-mora limit which predicts **anthrõpos*. To get *ánthrōpos* in such a grammar, we need a rule to shift the accent back one syllable in a X/VV/V sequence (cf. Sommerstein 1973: 126). The same rule is required to generate *dídōmi* 'I give' from intermediate **didõmi* (I assume that *dídōmi* was always so accented on the surface; cf. Skt. *dádāmi*). This shift rule might as well be called Vendryes' Law since it is identical to the historically attested change by that name, the motivation for which, I submit, was the interaction between the *dídōmi* type (previously marked for undergoing a minor shift rule) and the later 'exceptions' to the three-mora limit produced by compensatory lengthening (e.g. original **émensa* was accented correctly but innovated *émeina* violated the three-mora limit). These exceptions conspired with the *dídōmi* type to change the originally minor shift rule into a major rule ('Vendryes' Law'). But this was clearly not an

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Attic innovation. As *dídōmi* and *mímnō* /mí-men+ō/ 'I remain' show, the rule was always in Greek grammar in one form or another.

It is probable that Vendryes' Law did not change the contonation pattern, but just required that it be distributed over syllables rather than moras:

$$\overset{\text{12}\quad\text{3}}{er\tilde{e}mos} \text{ [ereemos]} \rightarrow \overset{\text{1}\ \ \text{2}\ \ \text{3}}{\acute{e}r\tilde{e}mos} \text{ [ereemos]}$$

(where '2' is probably a 'plurality of mid tones')

For such a distributing of accent compare the following words from Mende, a Mande language of Sierra Leone (Leben 1973, § 2.2): *mbä* 'companion', *nyàhâ* 'woman', *nìkílì* 'groundnut'. All of these words have the same contonation pattern in spite of their great difference in length. There is no reason, then, to suppose a priori that *ánthrōpos* 'man' could not have a pattern just like that of *phúlakos* 'of a guard'.

Vendryes' Law produced an accent pattern that was paralleled in enclitics by formations like *lógōn tinõn* 'of some words', accented like *andrõn tinõn* 'of some men':

$$\overset{\text{1}\ \ \text{2}\qquad\text{3}\ \text{12}}{\text{[logoon\#tinoon]}}\qquad\qquad\overset{\text{12}\qquad\text{3}\ \text{12}}{\text{[androon\#tinoon]}}$$

But *andrõn tinõn* is historically correct, i.e. the second hi pitch is on the third mora after the first, whereas in *lógōn tinõn* it is on the fourth. But notice that *lógōn ti-* is just like *érēmos*, i.e. it has a syllable structure V/VV/V, wherefore it is highly possible that the contonation was distributed as in *ánthrōpos*. Again, the remarkable ability of a word to distribute its contonation is indicated by Mende

/nyàhâ + encl. ma/ → *nyàhá-mà*. Likewise in Greek, $\overset{\text{1}\ \ \text{23}}{l\acute{o}g\bar{o}n}$ [logoon] → $\overset{\text{1}\ \ \text{2}\ \ \text{3}\ \text{12}}{l\acute{o}g\bar{o}n\ ti(n\tilde{o}n)}$ [logoon ti(noon)].

11. The question arises, why the accent distributing? Why not simply accent *lógōn tínōn which would be technically correct? It is a well-known fact that if an enclitic has more than one vowel segment, the first may not be accented, possibly because of a transderivational constraint (on which notion see Kisseberth 1969, 1974; Nessly 1973)—the same one that blocked the accentuation of *ti-* in *phúlaka tína, forcing the accentuation *phúlaká tína* 'some guard' (a.s.). If *tína, tinõn* were to be accented on the *ti-*, they would merge with the interrogative pronoun ('whom?', 'of whom?'). In Greek there is a well-defined dichotomization between interrogative words and indefinite words reflected in their accentual status:

<table>
12
põs [poos] 'how?' : *põs* 'somehow'
12
poũ [puu] 'where?' : *poũ* 'somewhere'
1 2
póte [pote] 'when?' : *potẽ* 'sometime'
1 2
tína [tina] 'whom?' : *tinã* 'some(one)'
</table>

There is a rule which accents interrogative words on the first mora (Kiparsky 1973: 798). The corresponding indefinites are obligatorily subject to enclitic formation and therefore never appear on the surface with an independent accent of their own. It seems reasonable to suppose that a transderivational constraint blocked the accentuation *lógōn tínōn* (cf. Allen 1973: 241). But why not *lógốn tinōn*? Would that not be [logoon tinoon], just like *phúlaká tina*? I should think so, but in cases like this (cf. also *édē te* 'and already', not *édế te*) the adjacent hi pitch constraint was generalized even though the hi pitches are not technically adjacent.

There may have been a phonological reason for this generalization. A word like *lógos* has a hi pitch and a lower pitch, whereas, on the basis of the musical evidence (§ 2), *lógōn* would have a *hi* pitch and a *falling* pitch. Greek has a falling pitch and a rising pitch motivated in underlying representations by $\overset{x}{V}V$ and $V\overset{x}{V}$ respectively, but nothing the equivalent of the combination falling-rising that would be required by *lógốn* in underlying representations and consequently did not permit it on the surface.

12. For a number of reasons the system in which accent spread predicted contonation broke down and became rule-bound, necessitating the following rules:

(1) Elision (optional): V → ∅ / — #(#) (h) V
[when the vowel is accented the accent shifts back one mora].

    sốmata#estin ~ *sốmat#estin* 'bodies are . . .'
    agathá##epoíei ~ agáth##epoíei 'he did good (things)'
    ánthrōpos##dé##eĭ ~ ánthrōpos##d##eĭ 'but you are a man'

    haútē##dé#estin ~ *haútē##d#estin* 'but this (fem.) is . . .'

(2) Pre-enclitic rule: V → [+hi] / — C₀# [+segment]
[subject to adjacent hi-pitch constraint: *lógos tis* (not *lógós tis*)]
    sốmata#estin → sốmatá#estin 'bodies are . . .'

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*ánthrōpos#t(e)# #eĩ → ánthrōpós#t(e)# #eĩ   'and   you
                                                            are a man'
(but no change in: ánthrōpos# #d(é)# #eĩ)

(3) Enclitic accent 'cleanup':
   V → [+hi] / [+hi] x $ x(# #C) # x $ Co — Vo Co#

[$ is syllable boundary and x must be [+segment]₁ or null]

   *sŏmat#estin → sŏmat#estín
   *haútē# #d#estin → haútē# #d#estín
   *lógōn#tinōn → lógōn#tinõn 'of certain words'
   *theõn#tinōn → theõn#tinõn 'of certain gods'

Final-syllable reduction (§ 8) must follow this rule:
   *sŏmat#estí# #kalá → sŏmat#estì# #kalá 'bodies are
                                                      beautiful'

The 'Cleanup' rule is strange because it ignores all sorts of syn-
tactic information (*haútē# #d#estín* vs. *sŏmat#estín*) and applie-
so long as the proper number of syllables is met between a hi pitch
and the second syllable of a dissyllabic enclitic. The very existence
of the rule is challenged by Sommerstein (1973: 161 ff.), but his only
'evidence' is that it constitutes an exception to the 3-mora limita-
tion. Why it does so has been explained above. This is one of the
changes we have tried to motivate—from 3 moras to (substantially)
3 syllables (cf. Allen 1973: 241, and the effect of Vendryes' Law
above). In addition observe Allen's remark (1968: 116) that
'a second contonation is required because otherwise there would be
a breach of the rule that a contonation may not be followed by more
than one mora.' It is precisely the fact that *haútē d' estín* does ignore
all kinds of syntactic information which shows us that these
sequences did become rule-bound, that accent spread was no longer
relevant.

13. Originally *énthá te* (Il. 2.594) 'where', *púrgón te* (Il. 22.462)
'(to) the tower . . .', etc. (well attested in MSS and papyri) were con-
toned just like *eĩtá te* 'and then', given the natural ability of sonorant
segments to carry tone (cf. Allen 1973: 242). Different dialects could
generalize the inherited patterns in two different directions: (1) they
could dispose of *énthá te* by generalizing the adjacent hi pitch con-
straint, as they did in the case of *édē te*, yielding Att. *éntha te*;
(2) they could generalize the rule that placed an accent on any final
mora preceding an enclitic (§ 12,1). These dialects generalized from
énthá te to *óphrá s(e)* (Il. 22.282) 'so that you', *hóssá t(e)* (Il. 22.115)
'and whatever', etc., which were not phonetically justifiable (cf.

Vendryes, §§ 96, 106; Chantraine 1958: 192; Allen 1968: 116), and producing such sequences as *ei pér tis sé moí phēsí pote* 'if indeed anyone ever mentions you to me' (with all enclitics after *ei* 'if'!) discussed by Herodian; cf. also Il. 5.812 *é nú sé pou déos ískhei* 'or now haply terror possesses you' (Herodian, Apollonius Dyscolus), in conflict with MS evidence from Venetus B of the Iliad: *é nu sé pou* (cf. Vendryes, § 94).

Sommerstein (1973: 164f.) disputes the type with alternating accents but all of these are possible dialects and make sense in terms of special enclitic rules. The alternate syllable accent type in fact has an analogue in modern Greek *phére mou to* [fére mú to] and *dós mou ton* [ðóz mu ton] which provide evidence for the dialect disputed by Sommerstein without an accent on each enclitic in succession (cf. Warburton 1970: 113). In the accent-spread-and-reduction system it is difficult to explain *haútē d' estín, éntha te* (surely *éntha* continued to have a contour [entha]), and the various operations across a string. If they were merely failing to apply the bending rule we should expect strings like **ánthrōpós tis moí phēsi* 'some man says to me', but nowhere does accent spread fail to bend within words, which means we would need special rules anyway in that system for handling enclitics. Such rules would be separate from the rules for ordinary contonation.

It seems probable, in conclusion, that the strange rules for accentuation in enclitic environments had a natural basis in terms of the ordinary contonation phenomenon, but because of various changes in the language, some involving enclitics directly and some only indirectly (like Vendryes' Law), and because of various generalizations and constraints in enclitic sequences, came to be separate from contonation and developed independent status of their own.

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