**The Benefits of Morphological Classification: On Some Apparently
Problematic Clitics in Modern Greek***

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1. Introduction and theoretical background

Any theory of grammar, and more particularly any theory of the component of a
grammar, the morphological component, that is concerned with words and word-like units and
the pieces that make them up, must provide some means of classifying 'elements', i.e.
morphemes and morpheme combinations, as to their morphological status. Of particular
concern is the classification of elements into different types along the scale in (1):

(1) word - clitic - affix

with *affix* on one end of the scale as the typical bound morpheme, *word* on the other end as
the typical free or complex morpheme, and *clitic* somewhere in between as a
quasi-word/quasi-affix.

A concern for classification with regard to these three constructs is not meant to deny
the importance of other taxonomic parameters for morphemes, such as, for words, content
versus function, or for affixes, inflectional versus derivational. However, there is a special
significance to the division of elements suggested in (1).

First, knowing where a given element falls on the classficatory scale in (1) permits one
to make predictions about expected behavior of particular items in specific languages. Thus,
once it is determined that the plural marker (// s //) in English is an affix, then certain
properties automatically follow. For example, under the frequently held assumption of the
integrity of stem-plus-affix combinations (see Kanerva 1987, for instance), the affixal status
of // s // would guarantee, accurately, that other, nonaffixal, material could not interrupt its
attachment to a particular noun.

Second, precise classification is necessary if cross-linguistic generalizations and
putative universals concerning the elements in (1) are to have any empirical content. As
Zwicky (1985) has emphasized, it is only by making a decision on such a classification that
testable generalizations about the behavior of such units within individual languages and
across different languages, i.e. universally, can emerge.

Particularly troublesome here are claims concerning clitics and clitic behavior, for their
ambiguous status, lying somewhere between words and affixes, represents an implicit challenge
to linguistic theory. Nonetheless, several generalizations about clitics have been proposed in
recent years, and these claims need the benefit of precise classification in order to be tested
adequately.

Two examples deserve mention here, for the facts to be considered below bear on their
viability as linguistic universals. First, Kaisse (1982) has proposed, as a modified version of
the generalization widely known as Wackernagel's Law, that S' (= 'S-bar') clitics must occur
in second position within their clause. Second, Zwicky (1987), following Klavans (1983) and
others, has claimed that there are no endoclitics, i.e. clitics that are positioned within the
morphological unit defined by a word (as if *Bo-'ll-b come were an acceptable variant of
<u>Bob'll come</u>, with the clitic variant <u>'ll</u> of the future auxiliary <u>will</u>).[1]

In order to carry out the classification necessary for the testing of such hypotheses, though, it is essential to have a set of criteria which will allow for a decision as to the categorial status of a given element. Although many linguists have proposed criteria for distinguishing among words, clitics, and affixes (see, for example, Carstairs 1981 or Muysken 1981), those put forth recently by Zwicky, in Zwicky (1985), Zwicky (1987), and Zwicky & Pullum (1983), are adopted here. These 'Zwicky criteria' present the strongest basis for deciding categorial status, for they are both internally consistent and derivative from the architecture of overall theory of grammar he assumes. In particular, Zwicky's conception of grammar has a highly modular system (whose modules generally correspond to different 'components' of grammar recognized in traditional frameworks) that has only limited interaction among the different modules; moreover, it has a monostratal phrase structure syntax that is maximally general, in that it refers to classes of items rather than to individual lexemes per se in its statements, and is further characterized by a rule-to-rule mapping between syntax and semantics.

Among the criteria that Zwicky proposes for distinguishing words, clitics, and affixes from one another are those given in (2); (2a) through (2d) distinguish affixes from nonaffixes (i.e., clitics and words), while (2e) and (2f) distinguish words from nonwords (i.e., clitics and affixes):

(2) a. selectivity in combinatory possibilities (affix: high selectivity; nonaffix: low selectivity)
     b. morpho(phono)logical idiosyncrasies (affix: shows idiosyncrasies; nonaffix: few or no idiosyncrasies)
     c. semantic idiosyncrasies (affix: shows idiosyncrasies; nonaffix: few or no idiosyncrasies)
     d. parallelled by a morphophonological process (affix: can show such parallels; nonaffix: shows no such parallels)
     e. ordering with respect to other elements (nonword: strictly ordered; word: some degree of free ordering (within other grammatical/semantic limitations)
     f. phonological dependence (nonword: dependent; word: independent)

Other criteria are proposed in Zwicky's discussions, but those in (2) are the most relevant for the discussion below.

The overall thrust of these criteria is that affixes are characterized by a high degree of idiosyncrasy in their realization and behavior, while nonaffixes, i.e. clitics and words, show a high degree of regularity and predictability in realization and behavior. This general characteristic of affixes derives from the theory assumed in Zwicky's model of grammar because only the occurrence of clitics and words--but not of affixes--in particular phrasal positions is licensed by the (maximally general) syntax, and further, all such syntactically licensed elements must correspond to overt and fully regularly derived phonological material and must have a direct and transparent, hence nonidiosyncratic, semantic translation; with affixes so characterized, the basis for distinguishing between clitics and words is provided by other behavioral characteristics, such as extent of independence of one sort or another, most typically of a phonological nature.

With these criteria in place, the two hypotheses about clitic behavior mentioned above--second position for S-bar clitics and the ban on endoclitics--can be explicitly tested. More particularly, apparent counterexamples to each of these claims provided by some facts from Modern Greek can be subjected to rigorous testing via Zwicky's criteria.

2. The Greek facts

The problems posed by the Greek facts both center on the finite verbal complex, a unit composed of the inflected verb plus various elements traditionally called 'clitics', in the case of the weak object pronouns (1SG ACC me, 1SG GEN mu, 3SG ACC NTR to, etc.), and 'particles', in the case of the modal markers na and as, the future marker θa, and the negation

markers _ðen_ and _mi_. These elements modify the inflected verb for tense, mood, negation, and argument structure (see Joseph 1985 for some discussion). The general schema for the verbal complex is sketched in (3), and some examples of the expansions of the verbal complex are given in (4):

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(3)  ( na )   -   ( min )   -   ( θa )   -      (WEAK PRONOUNS)     -     VERB
         as           ðen                    [1SG.ACC me, GEN mu, etc.]
       MOOD         NEGATION       TENSE         ARGUMENT.MARKER          HEAD

(4)  a.  ðen    θa   ta              fáo
         NEG    FUT  3PL.ACC.NTR     eat/1SG
         'I won't eat them'
     b.  ðen    tus          to         ðósame
         NEG    3PL.GEN      3SG.ACC.NTR give/1PL
         'We didn't give it to them'
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The classification of these elements is crucial for the claims concerning clitics noted above, for if any of the interior ones are true clitics (note especially the traditional label of 'clitic' for the weak pronouns) while the exterior ones are affixes, the clitics would present a clear case of endoclisis, being positioned within the bounds of a word unit consisting of a stem plus affixes. Similarly, the negation markers, whose distribution correlates with verbal mood-- _ðen_ occurring with indicative mood and _min_ with subjunctive mood--pose a problem for the modified Wackernagel's Law second-position generalization. To focus just on the indicative negator, relevant evidence concerning which is discussed below,[2] it need not occur in second position (note (5a) with sentence-initial _ðen_) even though its scope is demonstrably sentential.[3] In particular, the occurrence of a negative marker with the verb determines the selection of the negative polarity indefinite pronoun _kanénas_ as subject, as opposed to the nonnegative _kápjos_; this situation is illustrated in (5):

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(5)  a.  ðen    írθe         kanénas     /   *kanénas írθe
         NEG    came/3SG     no-one/NOM
         'No one came'
     b.  kápjos         írθe      /   *ðen írθe kápjos
         someone/NOM    came/3SG
         'Someone came'
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It turns out, however, that there is a solution to these problems posed by the Greek facts for the hypotheses noted above. In particular, a close examination of the properties of the morphemes in question--the weak pronominals and the indicative negator--with regard to the Zwicky criteria allows for an analysis of these elements as affixes and not as clitics in the strict sense that these criteria now permit. Crucial to this solution is the ability to classify the problematic elements on a principled basis as being outside the domain of these generalizations. In that way, both the negator _ðen_ and the weak pronominals become irrelevant for these hypotheses, and so do not constitute counterexamples to them.

3. Evidence for the affixal analysis from Standard Modern Greek

The affixal analysis that provides the key to preserving the above-mentioned generalizations is well-supported by facts from Standard Modern Greek. In particular, evidence is available that is relevant to the various criteria noted above.

With regard to the indicative negator _ðen_, it is clear first of all that must be a nonword. In particular, it is a phonologically dependent element: it cannot stand alone, for instance as a negative response word. By itself, *_ðen_ does not constitute a well-formed utterance, and cannot, for example, mean 'no; don't; not' independently. Second, it shows the strict ordering with respect to other elements it combines with that is characteristic of nonwords; as (6) shows, it must be leftmost in the verbal complex:

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(6)  a.  δen  θa   vlépo  /  *θa δen vlépo  /  *θa vlépo δen
         NEG  FUT  see/1SG
         'I will not be seeing'
     b.  δen  ton      vlépo  /  *ton δen vlépo  /  *ton vlépo δen
         NEG  him/ACC  see/1SG
         'I don't see him'
```

Other evidence suggests that of the nonword possibilities, δen shows some of the idiosyncratic behavior characteristic of affixes, and thus can be classified as a nonword, nonclitic, i.e. an affix. For instance, δen is highly selective in its combinatory possibilities, occurring only with indicative finite verbs, as in (7a), but not with subjunctive finite verbs, as in (7b), nor with nonfinite verbs, as in (7c):[4]

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(7)  a.  δen vlépo    'I don't see (PRES)'
         δen évlepa   'I wasn't seeing (IMPRF)'
         δen íδa      'I didn't see (AOR)'
         δen θa vlépo 'I won't see (FUT)'
     b.  *δen na vlépo / na δen vlépo 'that I not see (SUBJUNC)'
     c.  *δen vlépondas 'not seeing/ACT.PPL'
         *δen δés   'Don't see/IMPV.SG'
         *δen δéste 'Don't see/IMPV.PL'
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Also, δen shows a semantic idiosyncrasy in its use in the expression δen mu lés 'tell me ...', which introduces an inquiry without a trace of negative meaning, even though its literal meaning is 'you don't tell me'. While admittedly, the nonnegative meaning of δen mu lés may lie partly in the pragmatics, it is nonetheless true that in this expression, δen idiosyncratically does not have its usual negative value, and so prevents a fully compositional meaning for this phrase. The other criteria--morpho(phono)logical idiosyncrasies and parallelism with a morphophonological process--do not yield any further support for the affixal analysis, but neither do they point towards a clitic analysis of δen, for there simply is no relevant evidence from them at all bearing on the classification of δen. Thus, all the available evidence from Standard Modern Greek supports the claim that indicative negation is realized by means of an affix.

With regard to the weak pronominal elements, a similar case can be made for analyzing them as affixal elements. The facts are discussed more fully in Joseph (1988a, 1988b) but a sketch of the relevant data can be made here.

As with δen, it is clear that the weak pronominal forms cannot be independent words. In particular, they are phonologically dependent, not being able to occur, for instance, as one-word answers --the corresponding strong form must occur instead:

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(8)  pjón      íδe         o jánis?       eména          /  *me
     whom/ACC  saw/3SG     the-John/NOM   me/ACC.STRONG     me/ACC.WEAK
     'Whom did John see? Me.'
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In addition, they are strictly ordered with respect to the other elements they combine with, as (9) indicates:[5]

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(9)  δen ton       vlépo  / *ton δen vlépo / *ton vlépo δen / *δen vlépo ton
     NEG him/ACC.WEAK see/1SG
     'I don't see him'
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On other criteria, moreover, the weak pronouns test out as affixal, and not as clitics.[6] They show selectivity of combination, in general occurring only with verbs, although accusatives also occur with the adverb kalós 'well' in a collocation meaning 'welcome' (e.g. kalós ton 'welcome to him!') and genitives occur with some prepositions (e.g. brostá mu 'near me') and with a few adjectives (e.g. mónos mu 'on my own'). Though the existence of these

occasional nonverb hosts for the weak pronouns suggests a lesser degree of selectivity, at the same time, it is possible to point to extreme selectivity with respect to combinations with adverbs, for only kalós among the adverbs can support the weak pronouns. Also, the weak pronouns show various gaps in combinations, such as the absence of first person genitives with second person accusatives, e.g.:

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(10) *mu            se          óósane
     me/GEN.WEAK   you/ACC.WEAK  gave/3PL
     'They gave you to me'
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and such gaps constitute a type of selectivity recognized by Zwicky & Pullum (1983) as typical of affixes.

In addition, the weak pronouns show several idiosyncrasies. With regard to morphophonology, the second person singular genitive weak form /su/ in combination with any third person weak accusative form, all of which begin with /t-/, e.g. the neuter singular /to/, anomalously undergoes a contraction to [s], e.g. /su + to/ ---> [sto] 'to you it', even though there is no regular elision process affecting /u/ in that context in the standard language. Also, for at least some speakers, in some speech styles, the initial /t-/ of the weak third person pronouns may undergo voicing to [d-] in combination with the future morpheme θa and the modal marker na, e.g. /θa to káno/ --> [θa do káno] 'I will do it', even though intervocalic voicing of stops is not a regular feature of Greek phonology. With regard to morphosyntactic and semantic idiosyncrasies, it is significant that the weak pronouns can occur in idiomatic phrases with verbs which are ordinarily intransitive, e.g.:

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(11) pú    θa    tin          pésume
     where FUT   her/ACC.WEAK fall/1PL
     'Where will we go?' (literally '*Where will we fall her')
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In such phrases, the idiosyncratic behavior is twofold--not only is the weak pronoun empty, without any interpretation as an argument, but its cooccurrence with the intransitive verb is entirely irregular.

Given this behavior, from the perspective provided by the Zwicky criteria, one has to conclude that the weak pronominal elements of Standard Modern Greek, despite their traditional label, are best treated as affixes.

4. Dialect evidence

Beyond the evidence from the standard language presented in section 3, various facts from Greek dialects can be adduced to strengthen the case for the affixal analysis of the indicative negator and the weak pronouns pan-Hellenically. The modifier 'pan-Hellenically' is needed, for the dialect evidence cannot of course bear on the analysis in Standard Modern Greek per se, but they lend a typological credence to the analysis proposed here since the dialects, as varieties of Greek, are closer to Standard Greek in all respects--lexically, structurally, grammatically--than any other human language.

First, evidence bearing on the status of the indicative negator comes from the Tsakonian dialect of the southwest Peloponnesos, based on the description in Pernot (1934). In this dialect, the indicative negator is ó, but it is parallel to Standard Greek óen, coming historically from the first part (ou) of the Ancient Greek form oudén 'in no wise; not at all' (composed of ou 'not' + dé 'but' + hén 'one/NTR') which yielded óen. Moreover, some bidialectal Tsakonian speakers produced a hybrid negator óon, with the vocalism of the native Tsakonian form and the consonantism of the standard form, suggesting a closeness between the two forms that would permit inferences about the categorial status of the standard form from an examination of the dialectal form.

Two pieces of data are relevant here. As (12) shows, Tsakonian has innovated a virtual negative auxiliary through the fusion of ó with the verb 'to be', which is used in the formation of all present and imperfect tenses periphrastically in this dialect:

(12) 1SG óñi 'I'm not' (< ó + éñi)   1PL óme 'we're not' (< ó + éme)
     2   ósi 'you're not' (< ó + ési)   2   óthe 'you're not' (< ó + éthe)
     3   óni 'he's not' (< ó + éni)   3   úñi 'they're not' (< ó + íñi)

Not only does the fusion give the appearance of an inflected negative verb, but the details of the contraction process that gave rise to it, especially in the 3PL form úñi, would require its synchronic derivation from ó plus 'be' to involve some morphophonological irregularities. In particular, /ó + í/ does not regularly yield [ú] synchronically (rather, [o]), so that úñi would require a synchronically idiosyncratic treatment. Thus, if not inflectionally affixal because of the fusion, Tsakonian ó would nonetheless present a synchronic idiosyncrasy, i.e. a characteristic of affixes.

Also, for certain forms of the paradigm in (12) irregular truncated variants are possible, specifically: 1SG ói, 3SG ó, and 3PL úi, and at some point in the history of Tsakonian, the old 3SG form, óñi, separated off from the paradigm and was lexicalized as the emphatic 'surely not!' (the current 3SG being a reformation). Such specialization of individual forms is characteristically found with affixal formations, according to Zwicky & Pullum (1983), and not with those involving clitics, which are syntactically and semantically transparent. Thus, from this evidence, Tsakonian, and by extension, Greek in general, has affixal indicative negation.

Second, several dialect facts point to an affixal analysis of the weak pronouns. In particular, in many Northern dialcts (e.g. of Thessalia, Macedonia, etc., cf. Thavoris 1977), the first person singular weak pronoun m(é) has come to occur inside of an indisputable affix, the plural imperative ending -ti; examples of such forms are given in (13):

(13) a. pé-m-ti [= 'tell/IMPV' + 'me' + PL]   '(You/PL) tell me!'
     b. óó-m-ti [= 'give/IMPV' + 'me' + PL]   '(You/PL) give (to) me!'
     c. féri-mé-ti [= 'bring/IMPV' + 'me' + PL] '(You/PL) bring (to) me!'

Such placement is unusual and unexpected for clitics, for it amounts to endoclisis, an otherwise unattested positioning for clitics.[8] On the other hand, such interior placement is not unusual if m(é) is an affix.

Also, in Tsakonian, a singular weak pronoun regularly occurs in a semantically empty usage as an optional but preferred accompaniment to a plural weak pronoun, as in (14):

(14) tsi   m   epétsere námu
     what me/ACC.WEAK said/2SG us/ACC.WEAK
     'What did you say to us?' (literally: 'What did you tell me to us?')

Thus, in such a construction, there is anomalous nonagreeing 'doubling' of the plural weak pronoun. Not only does (14) reveal a semantic idiosyncrasy, in the form of a null interpretation, of the weak pronouns in Tsakonian, but it also reveals a syntactic idiosyncrasy, in the form of an irregular sort of agreement pattern, for person only and not for person and number, as is found, for instance, with doubling of a strong pronoun by a weak pronoun.

Finally, the dialect of Tírnavo in Thessalia, as described by Tzartzanos (1909), presents a clear case of processual realization of an entire weak pronoun (criterion (2d) above). In this dialect, the feminine accusative singular weak pronoun, which has the form [tn] before vowels, is realized with verbs having an initial dental stop or affricate simply as voicing on the verb's initial consonant. For example, contrasts such as those in (15) occur:

(15) a. [téraksi] 'he disturbed' vs. [déraksi] 'he disturbed her'
     b. [t^{S}ékusi] 'he caught' vs. [d^{Z}ékusi] 'he caught her'
     c. [t^{S}imsi] 'he pinched' vs. [d^{Z}imsi] 'he pinched her'

Processual realization--here by the process of voicing--is expected in Zwicky's system only for affixes, not for clitics, so Tírnavo offers clear-cut evidence in this framework for the affixal analysis under consideration.[9]

Both the indicative negator and the weak pronouns, therefore, show themselves clearly in these dialects to be affixal in nature.

5. Conclusion

What emerges from this brief discussion is that these elements from Modern Greek, which at first glance seem so problematic for claims regarding clitics universally, turn out to present no problem, once a stringent set of classificatory criteria is applied to the data. Rather than being clitics, they are instead well-behaved affixal elements and as such are irrelevant to the hypotheses discussed at the outset. A ban on endoclisis and second-position for S-bar clitics can therefore be maintained as viable universals, given present knowledge. To be sure, more examination of the Modern Greek verbal complex is needed, though the preliminary indications[10] are that it is a word-level unit, built up of a verbal stem plus clitic modal markers, tense prefixes, negation prefixes, affixal argument markers (realized prefixally for finite verbs, and suffixally for nonfinite forms), plus regular aspectual suffixes and suffixes for the person and number of the subject.

Thus the principles of morphological classification inherent in Zwicky's framework have enormous benefits for research in this area. To the extent, then, that the Zwicky criteria lead to satisfying results in dealing with these seemingly difficult facts, the analyses presented here can be said to lend considerable credence to the overall framework and approach to morphological classification embodied in Zwicky's theory.

Notes

1. Some apparent cases of endoclitics have been reported for various languages, but upon closer inspection each putative case has turned out to have a better analysis in some other way (see e.g. Nevis 1984, Klavans 1985, Macauley 1986). Thus, at present the claim of nonoccurrence for endoclitics constitutes a relatively secure working hypothesis. Moreover, it is theoretically desirable to maintain such a ban on endoclitics (data permitting), under an assumption that words, as the output of the morphological component, have an internal integrity (see Kanerva 1987) that is not subject to alteration by the syntax, the component responsible for the distribution of syntactic classes, including clitic elements, and for the internal structure of phrases, but not for the distribution of word-formatives (affixes) and the internal structure of words.

2. I am deliberately ignoring the potential counterexample posed by the modal negator min, largely for reasons of space; although it is a safe assumption that the considerations to be discussed regarding the classification of ðen carry over into the classification of min, min presents other analytic problems that go beyond the scope of this paper so that all the relevant evidence regarding min can not really be explored here (see Joseph & Janda 1987 for some discussion of min).

3. Similar problems for the modified Wackernagel's Law would arise, of course, if any of the MOOD and TENSE markers in (3) are sentential in scope and are clitics (so also with the modal negator min (see footnote 2)).

4. On finiteness in the Greek verbal system, see Joseph (1983: Ch. 2) and Joseph (1985).

5. There is one predictable difference in the ordering of the weak pronominals, namely that besides the leftward placement evident with finite verbs, as in (6b) and (8), they regularly occur to the right of nonfinite verbs, e.g. with the active participle as in vlépondás ton 'seeing him'. Since this ordering difference is predictable based on finiteness (see also footnote 4), it does not contravene the import of the strict ordering criterion for affixhood. Similarly, the fact that weak pronominals, in some dialects of Greek, regularly follow even finite verbs is irrelevant to the question of strict ordering, for in such dialects, the ordering of these elements with respect to those they combine with is still strict.

6. Note also that based on evidence too detailed to present here from vowel contraction, stress assignment, and voicing assimilation, Malikouti-Drachmann & Drachmann (1988) conclude that the weak pronouns of Greek pattern more clearly with verbal prefixes than with free words, suggesting that phonologically, the weak pronouns need not be referred to with a separate class label such as 'clitic'.

7. See Warburton (1977) for some discussion of the relevant facts from Greek concerning weak pronominal combinations.

8. Admittedly, one could say that these are prima facie cases of endoclitics, the very construct the weak pronouns are being argued not to constitute in the verbal complex (e.g. in (4)). In the cases in (4), endoclisis depended on a demonstration that some controversial elements, e.g. the negator en, are in fact affixes and not clitics, whereas in the forms in (13), an obvious affix (-ti) is involved, so that alternatives to an endoclitic analysis should at least be considered.

9. There is of course a possible synchronic derivation for this processual realization, one which mirrors the diachronic source: /tn + táraksi/ ---> tn dáraksi ---> tdáraksi ---> [dáraksi]; however, what is relevant in Zwicky's system is the surface realization of particular morphemes, so that the contrasting pairs in (15) are significant.

10. This work is part of a larger research project into the morphosyntax of the Modern Greek verbal complex, the full results of which have been made public in various lectures in the United States and Europe in 1987 and 1988 and should appear in print in the near future.

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