Pseudo-Agglutinativity in Modern Greek Verb-Inflection and "Elsewhere"

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0. Introduction and overview.*

Positing agglutinative structures for "Standard Average European" languages can be problematic. Sauvageot 1962:29-30, for example, shocked his compatriots by describing the morphosyntax of French clitic+verb complexes as essentially Bantu-like and thus implying that, as a way to express 'I see it (the book)', e.g., the French utterance je=le=vois (le=livre) 'I=it=see-pres[ent] (the=book) corresponds closely to Swahili *n-a-ki-ona* (*ki-tabu*) 'I-pres.-it-see ([the] ki:class-book)'. That is, especially in view of the inseparability and the agreementlike nature of the grammatical morphemes which precede the verb root in Colloquial French utterances such as above $\frac{z(\partial)l(\partial)vwa(l(\partial)liv(r(\partial)))}{sauvageot}$ hinted that these elements should be regarded not as clitics but as agreement prefixes (which can thus be more revealingly set off with hyphens than with the clitic boundary =). On this analysis, French *je-le-vois* is no less a polymorphemic, polysynthetic word than is Swahili *nakiona*. Such treatments have in fact often been proposed, over the past 120 years (e.g., by Diez 1871:252, Darmesteter 1877:4, Meyer-Lübke 1899:311, Dauzat 1908:45, Bauche 1920:102, Bally 1932:300, and von Wartburg 1943:51; cf. Pignatelli 1988); within modern syntactic theories, too, they have recently won numerous adherents (e.g., Ossipov 1990, Roberge 1990, and Auger 1993), though this approach remains controversial (cf. Rizzi 1986). In any case, it is crucial to note that all the accounts at issue view French as having gained agglutinative verb- morphology via cliticization and univerbation of analytic pronominal elements that were themselves replacements for the synthetic, fusional verb-morphology of Latin --as am-o 'love-1[stperson]:s[in]g[ular]:pres:act[i]v[e]:ind[icative]' (= 'I love').

Mod[ern]Gr[ee]k is likewise reminiscent of Bantu languages in the agglutinative behavior of various object- and other markers associated with verbs (see Joseph 1988, 1990), but its largely suffixal markers for subject person/number and for tense/aspect/mood would superficially seem to have retained the fusional status they had in Anc[ient]Grk as traditionally described. Yet, if we apply to ModGrk verb-inflection the usual structuralist and generativist practice of first looking within verbs for the maximum number of recurrent partials and then factoring these out as morphemes, we obtain highly agglutinative structures. E.g., in the 3[rd]pl[ural] [medio-]pass[ive]past-i[m]p[er]f[ecti]v[e] form γ rafóndane 'they were being written' [(Note) 1], the six elements $-\dot{o}$, -n, -d, -d, -a, -n, and $-\dot{e}$ recur with similar meanings elsewhere in the passive paradigm and thus would all be analyzed as distinct morphemes by morphological segmentation-procedures of the usual sort. As a result, the four-syllable word γ rafóndane ends up with a root and six suffixes--and so has the structure $\gamma raf-\delta-n-d-a-n-e$, where six of seven morphemes contain only a single segment. This is parallel to the agglutinative structures proposed by Harris 1987 for verbs in Spanish--where the isofunctional recurrence of numerous formal elements yields analyses in which a form like paseéis 'you (pl.) take for a walk (subi[unctive])' is given the underlying structure /pas+e+a+e+i+s/, with three surface-syllables but six morphemes (of which five are monosegmental) [2].

In this paper, however, we show that, at least for ModGrk, accounts which posit such sequences of largely monosegmental affixes actually constitute what can be designated "hyperanalysis", "hypersegmentation", or (most iconically) "pseudoagglutinativity", since they run massively afoul of the so-called "Elsewhere Condition (EC)"--the disjunctive-ordering principle assumed for morphology by Anderson 1982ff., Kiparsky 1982ff., and many others. Anticipating our presentation below of the full range of supporting data, we can summarize the argumentation that leads to this conclusion by reapproaching the relevant problem as follows. In the past imperfective--henceforth the "imp[er]f[ect]"--ModGrk verbinflection contains a large number of recurrent phonologically and semantically constant elements--e.g., just in the -a, -es, -e, -ame, -ate, -an(e) of the active voice (for 1.sg., 2[nd] sg., 3.sg., 1.pl., 2.pl., 3.pl., respectively), we find shared $-\underline{a}(-)$ and e(-). Given such distributional facts, the usual methodology of generative (or structuralist) morphology forces us to analyze a string like -ame as the concatenation of several monosegmental morphemes. Whether this analysis is correctly agglutinative or merely pseudo-agglutinative might seem to be a question decidable only with reference to general notions like distribution and simplicity, but it can in fact be decided empirically. Since many current theories of morphology associate morphemes with rules (or principles of lexical selection) that are subject to restrictions imposing disjunctivity, any proposed segmentation of a form into morphemes can be tested against whether or not it is compatible with a constraint like the EC.

As regards the ModGrk imperfect, though, current methods of morphemic analysis turn out to be incompatible with present constraints on disjunctivity, and so one of the two (or both) must be given up-preferably the former: i.e., the hyperanalysis that results in pseudo-agglutinativity. Even if the EC is maintained, however, the insights that pseudo-agglutinativity seeks to capture can still be expressed via the previously proposed device of "meta-redundancy rules" or "metatemplates" (cf. Janda & Joseph 1992a), a notion which has already been independently motivated for parallel cases where two or more morphological rules or representations are formally similar but nevertheless uncollapsible. mechanism can thus be exploited even if, as has been argued (by Janda & Sandoval 1984, Janda 1987), the EC is untenable as a general constraint on morphology and must therefore be rejected in favor of a more limited restriction of lexical "Blocking" (cf. Aronoff 1976). In either case, recognizing meta-redundancy rules (or metatemplates) makes it possible to analyze ModGrk verb-endings like -ame or even *óndane* as containing fewer than three suffixes without having to treat as accidental the extensive similarities which such strings share with other members of the paradigms for the imperfect.

1. Background: On the Linguistic Analysis of Recurrent Elements & Patterns.

Just after Kuhn 1962 had introduced the notion of "paradigm(s)" into discourse on the history and philosophy of science, Chomsky 1964:70-77 presented a discussion of English phonology which quickly became established as one (partial) paradigm for linguistic argumentation. Chomsky argued (using slightly different examples than those cited here) that, given alternations like the /s / \sim /z / in conserve vs. reserve (voicing), the /z / \sim /z / in revise vs. revision ("palatalization"),

and the $/s / \sim /z /$ in precise vs. precision (both voicing and palatalization), the best analysis for the last case is to factor out voicing and palatalization and to posit separate rules for them. Above all, that is, the analyst should avoid recognizing a combined basic rule of voicing-and-palatalization. Extended from English fricative consonantism to phonology in general, this paradigm example of generative argumentation can be reformulated roughly as follows: (i) find recurrent alternations of particular features (or feature-combinations); (ii) factor these out and posit them as simple basic rules (or principles), and (iii) thereby avoid recognizing complex basic rules (or principles) which show accidental formal similarities to one another. And, for language overall, the corresponding general directives require that linguists should (to the maximum possible extent): (i) find recurrent formal elements; (ii) factor these out and posit them as small(er) basic units--e.g., as representations or rules--and (iii) thereby avoid recognizing large(r) basic units whose parts show accidental formal similarities to one another. Or, translated into the vernacular: Factor to the max!

This argumentational paradigm has the major advantage of favoring analyses that maximize simplicity--and in several senses. First, outright economy can be secured--since, overall, a minimal number of elements can be posited (rules, segments, features, etc.). Second, generality is ensured, because optimal use can be achieved for maximally many of those elements--e.g., rules--that are posited (usually, the simplest ones); to the extent that entire linguistic patterns are expressed in terms of one element (especially a single rule), generalizations can be captured (cf. Sampson 1975, "One Fact Needs One Explanation"). Third, arbitrariness can be reduced, since positing recurrent elements obviates the need to admit accidental homophonies. Fourth, independent motivation can often be obtained (and ad-hocity thereby minimized) as a result of the fact that various properties bearing on the nature of an element may be available due to its occurring in several environments.

Since it has such advantages in the abstract, it is not surprising that the general linguistic strategy of maximal factorization is usually carried over to morphology with little, if any, discussion. This is the case perhaps especially because the segmentation of words into morphemes is often characterized as the identification of "recurrent partials"--i.e., of shared formal elements. In morphology, the factoring paradigm is thus roughly of the following sort: (i) find sets of contrasting, partially similar monomorphemic and polymorphemic words like green vs. brown, brown vs. brown-er, and green vs. green-er; (ii) factor out recurrent elements like green, brown, and -er as separate morphemes, and (iii) thereby avoid recognizing as monomorphemes longer units, like browner and greener, which accidentally share an element that, like -er, appears to be both formally and semantically invariant.

Nevertheless, we show in the following sections of this paper that precisely the analysis of real morphological paradigms raises issues suggesting that unwavering adherence in morphology to the practice of factoring out recurrent elements and positing them as separate morphemes often leads to unnecessary cases of pseudo-agglutinative hyperanalysis (excessive segmentation into morphemes). Such allegations are most emphatically not the result of some vague linguist's or speaker's intuition that, e.g., it is simply excessive to analyze every segment as a morpheme in a verb-ending like abovementioned ModGrk 3.pl.pass.imperf. $-\acute{o}$ -n-d-a-n(-e). On the contrary, it is the primary contention of this paper that, as already

mentioned in the previous section, the hypersegmenting pseudo-agglutinativity of such analyses is demonstrably incompatible with a constraint which, in most current theories of word formation, is expressed via the major morphological principle usually known as the Elsewhere Condition--to which we now turn.

2. (Pseudo-)Agglutinativity vs. the Morphological "Elsewhere Condition (EC)".

In the the general approaches of both Kiparsky 1982ff. ("Lexical (Morphology &) Phonology [L(M&)P]") and Anderson 1982ff., 1992 ("A-Morphous Morphology [AM]"), each non-root morpheme is--or at least is associated with--a morphological rule. In LP, this is because the output of every morphological rule can be treated as a lexical entry; each lexical entry can in turn be viewed as an "identity rule". In AM, on the other hand, all non-root morphemes are in fact treated as processual rules, since this is the only way to unify morphological operations like subtraction, replacement, or permutation with affixations and other additive morphology. In either case, though, segmenting an ending into a string of morphemes necessarily involves positing a sequence of morphological rules. But, since both theories require that the interaction of all such rules obey the EC, a particular morphological segmentation of a word is valid only if the corresponding rules operate within the narrow confines which the EC allows. Hyperanalysis can thus frequently be shown to yield a plethora of rules whose interaction contradicts the usual claims that morphological processes are subject to disjunctive ordering via the EC.

The essence of the EC (in any linguistic domain where it is alleged to hold) is that, when the same representation could in principle undergo either of two rules which have conflicting effects and are related such that one is more general and the other more specific (being applicable only to a proper subset of the forms potentially affected by the other), then the specific rule applies first and exclusively, thereby disjoining (pre-empting) the conflicting general rule. Since the ensuing discussion refers so often to the morphological EC [3], we next present two recent, significantly differing formulations of the constraint as regards its bearing on morphology.

In LP, the most common sort of characterization given for the EC is that of Kiparsky 1984:138: "The... Elsewhere Condition ...[is t]he idea ... that particular rules ... block general rules[; that is,]...Rules A, B in the same component [(i.e., both in the lexicon or both in the post-lexicon)] apply disjunctively if... (i) ...[t]he input of A is a proper subset of the input of B...[, and] (ii) ...[t]he outputs of A and B are distinct." This was also basically the form which the EC took in an earlier instantiation of AM (viz., the "Extended Word-&-Paradigm (EWP)" theory; cf. Anderson 1982): given a specific rule (S) in conflict with a general rule (G), the former applies first and disjoins the latter (+S,-G), so that neither conjunctive order is possible (*+S,+G or *+G,+S), and no pre-emption by a general rule (*+G,-S).

But, without comment, Anderson 1986:2-4 later redefined the EC in a less restrictive way, reducing it to a prohibition against general rules applying after conflicting specific ones: "Rules that specify the realization of some set of features in ...[morphosyntactic representation] prevent the later application of rules whose... [structural descriptions] refer to a proper subset of those features". This very much

weaker EC merely states that "the application of ...[a] specific rule precludes the later application of ...[a] general... one" (hence +S,-G but not *+S,+G), thus allowing interactions where a general rule conjunctively precedes a conflicting specific rule (+G,+S) or even disjunctively pre-empts it (+G,-S--a situation that arises when additional "Blocking" at least once disjoins a general rule, yielding -G,+S; cf. Janda & Sandoval 1984:24, Janda 1987:452-462). Anderson 1992:132, now with comment, repeats this more permissive "'Elsewhere' Principle" in the following form: "Application of a more specific rule blocks that of a later more general one".

This weaker Andersonian variant of the EC is assumed less often in the current morphological literature than is its restrictive Kiparskyan counterpart, but what is more significant is that, as shown by our discussion of ModGrk verbal morphology in subsequent sections, either version of the EC is incompatible with pseudo-agglutinative hyperanalysis of the sort exemplified by abovementioned 3.pl.pass. imperf. -6-n-d-a-n-(e). Here, to mention just one violation of the EC entailed by such a hypersegmentation, the presence of the first -n- as a specific marker of '3. pl.' should be sufficient to pre-empt the optional presence of the final e as a more general marker of both 'pl.' and 'pass.ipfv.pres.sg.; ...' (since the suffix combination -n-...-e represents a +S,+G sequence prohibited by the EC, either à la Kiparsky or à la Anderson). Indeed, the major conclusion that will emerge from our detailed consideration below of the person-, number-, tense/aspect-, and voicemarking in the ModGrk imperfect is that, when the formal elements which recur across the various endings are factored out as separate morphemes and accounted for via individual rules, the resulting hyperanalysis entails literally dozens of violations of the EC. And these EC violations include instances where a general rule applies not only before a conflicting specific rule (+G,+S, disallowed only by Kiparsky's EC) but also after a specific rule (+S,+G, disallowed by Anderson's EC as well).

It is clear, then, that hyperanalytical pseudo-aglutinativity and the morphological EC are incompatible; at least one or the other must be abandoned. Linguists who believe that a premium should be placed on factoring out the maximum number of recurrent morphological partials within words and recognizing them as distinct morphemes may view this incompability as providing motivation for questioning or even rejecting the applicability of the EC to morphology. This situation can thus, on the one hand, be seen as providing support for the claim of Janda & Sandoval 1984 and Janda 1987:409-599 that lexically-free morphological rules (i.e., regular ones) are not subject to the same EC that governs phonology, but instead only to a much less restrictive principle whereby a lexically-limited generalization blocks the application of a conflicting general rule [4]. This is the constraint called "Blocking" by Aronoff 1976 and actually proposed earlier by Paul 1897 in the modern era and by Panini ca. 500 BC / Katre (ed.) 1987 in ancient times [5]. Clearly, if the general EC usually assumed to govern morphology is abandoned in favor of a lexically-restricted "Blocking" principle, then extreme morphological segmentation of the kind represented by previously mentioned ModGrk -ó-n-d-a-n-(e) comes to be entirely unproblematic--and hence not pseudo-agglutinativity but real agglutinativity

On the other hand, though, many linguists will be unwilling to abandon the general EC as a central principle of morphology, mostly because it is such a crucial

part of current approaches like LP (where it is primarily the EC which is responsible for cyclicity, structure preservation, non-application of cyclic rules to underived forms, and many rule-blockings or -orderings). For those with such a vested interest in the constraint, the many EC-violations entailed by hypersegmenting, pseudo-agglutinative analyses like ModGrk -ó-n-d-a-n-(e) will probably be taken to contra-indicate maximal factorization in morphology--i.e., as evidence that not all recurrent phonologically and semantic constant elements are to be recognized as distinct morphemes. Additional justification for this view might take the form of suggestions that to posit pseudo-agglutinative analyses is actually to engage in quasi-historical hyperanalyses of an illegitimate sort--that is, ones not reflective of the synchronic competence of native speakers.

3. A Compromise: Meta-Redundancy-Rules / Meta-Templates in Morphology.

However, there is an alternative approach which allows us to acknowledge that certain (parts of) words share significant, non-accidental commonalities of form and yet does not require us to treat these similarities as distinct morphemes associated with individual word-formation rules whose interaction violates the morphological EC. This solution centers on the claim that hyperanalytic pseudoagglutinativity (accompanied by massive violations of the EC) is in fact unnecessary, because there exists a non-morphemic mechanism for expressing systematic partial similarities of form shared by words (and morphological rules)--namely, the "metaredundancy-rules" or "meta-templates" of Janda & Joseph 1986, 1989, 1992a, and 1992b-MS (cf. also Janda 1982 and Joseph & Janda 1988). For example, such meta-statements are motivated for Sanskrit by the existence of numerous reduplication-rules whose near-identity can hardly be accidental (e.g., they all copy only the t of an st...-root vs. only the s of an sn...-root) but which also show significant differences (e.g., in prefixal vs. infixal status, overall template-shape, and vocalic or consonantal prespecification) and so cannot be collapsed into a single rule. Positing a meta-redundancy rule, though, permits us to unite the myriad similar reduplication-rules of Sanskrit as a single "rule constellation" (see Janda & Joseph 1986, 1989).

In like fashion, the morphological umlaut of Modern High German (NHG) turns out to be really a constellation of slightly differing processes (cf. Janda 1982): e.g., plural umlaut can apply to polysyllabic words and the vowel /au/ (as in Mütter 'mothers' and Häus-er 'houses'), but comparative/superlative umlaut cannot (cf. munter-er 'more cheerful' and braun-er 'browner'). Still, a meta-redundancy-rule can express what the various German umlaut-rules have in common; it can be notated roughly as follows: ... /...V... /... --> ... /... [V, -back] ... /... This formalism "parses", as it were, the identical portions of all morphological rules of German which perform vowel-fronting (regardless, e.g., of whether they apply to In this sense, a meta-redundancy-rule is merely a polysyllables and /au/). generalization stating that every occurrence of the particular formal configuration which it expresses (possibly including features of morphosyntax and semantics, as well as phonology) is to be evaluated as an instance of the same morphological element. However, since uncollapsible similarities of this sort can also be found between a morphological rule and a lexical item (cf. Frank 1991), as well as between two morphological templates (cf. Janda & Joseph 1992a), it is perhaps more revealing to give them the alternative (and shorter) label "meta-template(s)".

Once such mechanisms are available, though, we may extend their use and employ them in order to express apparently non-accidental similarities such as the aforementioned ModGrk case of the -a(-) and -e(-) shared in a ragged pattern across the $-\underline{a}$, $-\underline{e}s$, $-\underline{e}$, $-\underline{a}m\underline{e}$, $-\underline{a}t\underline{e}$, $-\underline{a}n(\underline{e})$ of the activity imperf. (where -a(-) = [{+I[st person], +pl.] and $-e(-) = [\{-I, +pl\}]$). After all, this set of six verb-endings exactly meets the definition of a morphological rule-constellation as "a group of ...similar ...[elements] sharing at least one characteristic property of form but distinguished by ... [functional or] formal idiosyncrasies which prevent their being collapsed" (cf. Janda & Joseph 1986:104). In fact, since these same desinences occur after the suffixes for the perfective past (both active and passive), we can posit two general meta-templates for their recurrent elements: namely, /a... /[{+I, +pl.}, +past, {+actv., -ipfv}] and /...e... /[{-I, +pl.}, +past, {+actv., -ipfv}] [6]. With meta-statements of this kind to express the relatedness of the six endings in question, we no longer need to analyze -ame, etc. as being generated via the application of three sequential monosegmental suffixation-rules--and hence as involving polymorphemic strings like -a-m-e, etc. Instead (if so desired), rules may be posited that directly generate entire polysegmental suffixes like -ame, etc.--which are thus monomorphemic, but whose formal similarities may nevertheless be expressed by meta-templates (née meta-redundancy-rules) that parse the elements which recur between and among them.

In this way, meta-templates make it possible to avoid an apparent paradox: that maximizing the recognition of recurrent partials in word structure simultaneously seems to entail increasing the number of instances where the associated morphological rules interact so as to violate the EC. In our present case, the many similarities among the ModGrk. actv.imperf. forms -a, -es, -e, -ame, -ate, and -an(e) can be parsed by several meta-templates--for abovementioned -a(-) and -e(-), plus additional ones for 2.sg. -s(-), 1.pl. -m-, 2.pl. -t-, and 3.pl. -n(-). But, because -ame, -ate, and -an(e) then involve only one morpheme and hence only one morphological rule each, their generation cannot possibly violate the EC. A three-morpheme, three-rule derivation of -a-t-e, and -a-n(-e), however, involves two such violations (= one for -a-t-e and one for -a-n(-e), but none for -a-m-e), since the general [+pl., ...]-marking rule of -e suffixation (cf. Note 6) applies conjunctively with the two conflicting specific rules for [+pl., +II, ...] -t- and [+pl., +III(rd person)] -n(-) [7].

4. Hyperanalytic Pseudo-Agglutinativity, EC Violations, & the ModGrk Imperfect.

For partisans of the EC unwilling to abandon the enterprise of expressing shared formal and functional similarities across words, then, the adoption of some mechanism like meta-templates (or meta-redundancy-rules [8]) seems unavoidable. To repeat, though, this conclusion depends on a sufficiently convincing demonstration that pseudo-agglutinative hypersegmentation of words into many morphemes--which are in turn associated with numerous morphological rules--can lead to excessively many violations of the EC. We thus now present the facts--and the seeming hyperanalytic fiction--associated with the imperfect of ModGrk verbs [9].

As discussed briefly above, the ModGrk imperfect expresses past tense and imperfective aspect; it shows both an active and a (medio-)passive paradigm, each

with forms for the usual three persons (1. vs. 2. vs. 3.) and two numbers (sg. vs. pl.). The two voices (actv. vs. pass.) of the imperfect thus represent roughly one quarter of the ModGrk verbal system, since the latter's two tenses (pres. [or non-past] vs. past), two aspects (pftv. vs. ipfv.), and two voices vary independently in such a way as to yield eight full paradigms. The distinctness of the paradigms can be shown in part by comparing the entire set of 1.sg. forms--as we do next for the verb meaning 'write'. Among the ipfv.actv. forms, pres. γ ráf-o contrasts with past é- γ raf-a (here, the e- prefix is the so-called "augment"--once phonologically conditioned as a bearer of antepenultimate stress in many past-tense verbs, but now morphologically determined [10]). The two previous 1.sg. forms are distinct from pftv.actv. verbs like pres. γ ráp-s-o and past é- γ rap-s-a (also with the augment). Within the likewise unique set of ipfv.pass. forms, pres. γ ráf-o-me contrasts with past γ raf-o-mun(a)--treated in more detail below--while the final contrasting pair, involving pftv.pass. verbs, includes pres. γ raf-t-ó and past γ ráf-t-ik-a.

As for the ModGrk imperfect itself, the members of its two paradigms are the following (again for 'write'): as actives (partly augmented), we encounter 1.sg. é- γ raf-a, 2.sg. \acute{e} - γ raf-es, and 3.sg. \acute{e} - γ raf-e, plus 1.pl. γ ráf-ame, 2.pl. γ ráf-ate, and 3.pl. γ ráf-an(e) (= γ ráf-ane or é- γ raf-an or even γ ráfan; see Note 10); as passives, we observe (where -\u00f3- marks 'pass.past.ipfv.') 1.sg. \u03c4 raf-\u00f3-mun(a), 2.sg. \u03c4 $raf-\acute{o}-sun(a)$, and 3.sg. γ $raf-\acute{o}-tan(e)$, as well as 1.pl. γ $raf-\acute{o}-maste$, 2.pl. γ $raf-\acute{o}$ saste, and 3.pl. γ raf- δ -ndan(e) (= γ raf- δ -ndane or γ raf- δ -ndan; cf. also the other variants listed in Note 1 above). If we follow the common practice of factoring out from such forms a maximum of recurrent partials, then we can arrive at two sets of corresponding (hyper)segmentations--often via comparison with other ModGrk forms not listed here (but cf. Koutsoudas 1962 or Joseph & Philippaki-Warburton 1987). In the active, we see aforementioned 1.sg. -a, 2.sg. -e-s, and 3.sg. -e, plus 1.pl. -a-m-e, 2.pl. -a-t-e, and 3.pl. -a-n(-e). But, in the passive (after -6- has been isolated), we instead find more pseudo-agglutinative 1.sg. -m-u-n(-a), 2.sg. -s-u-n(a), and 3.sg. -t-a-n(-e), plus 1.pl. -m-a-st-e, 2.pl. -s-a-st-e, and 3.pl. -n-d-a-n(-e) (from /-n-t-a-n-e /, via the following phonological rule: /t / --> d / n [11]).

Regarding the six members of the actv.imperf. paradigm, we saw in the previous section that a pseudo-agglutinative hyperanalysis for the three numbers of the plural yields one counterexample to the EC for each of two forms, for a total of two EC-violations (both +S,+G). That is, in -a-t-e and -a-n(-e), each of the two specific morphological rules respectively associated with [-I, {[+II, +pl., {+actv., +pftv}], [...]}] -t- and [+III, +pl.] -n- applies conjunctively with the general rule for [{[+pl., ...], [...]}] -e(-) [12]. We therefore now turn our attention entirely to the six pass.imperf. forms, which involve the longest endings in the ModGrk verb-system and consequently, when hypersegmented, give rise to the most violations of the EC-in fact, no fewer than eleven.

In order to highlight not only the sequences of pseudo-agglutinative morphemes contained within these items but also their shared formal similarities, we next line up their internal parts, with the three persons arranged horizontally and the two numbers given vertically (recall that underlying /t / regularly becomes d after n):

Given that at least five and arguably six suffix-positions thus seem to be required for the passive imperfect (= the past.ipfv.) [13], we must allow for sequential application (or at least interaction [14]) among a minimum of six morphological rules whose operation could potentially violate the EC.

In actuality, it turns out that a pseudo-agglutinative hyperanalysis of just the above six forms necessitates as many as eleven EC-violations, of which all but two are counterexamples to the abovementioned weaker definition of that constraint proposed by Anderson 1986, 1992 (who disallows only +S,+G; the remaining violations show +G,+S--called "Anti-Elsewhere" by Janda & Sandoval 1984 and Janda 1987:409-599). In the rest of this section, we discuss the details of these counterexamples, combining the discussion of parallel cases and formulating only those rules (associated with hypersegmented elements) whose interaction violates the EC.

For both the 1.sg. and the 2.sg. pass.imperf., the conjunctive suffixation of both -u- and -n(-) violates the EC (as +S,+G), since -u- specifically marks the features [+pass., +ipfv., +past, -pl., -III], while -n(-) more generally signals [+pass., +ipfv., +past, {-pl., +III}]. For these same two forms, the conjunctive suffixing of n(-) and (optional) -a also violates the EC (as Anti-Elsewhere +G,+S), because -n(-), to repeat, realizes the general set of features [+pass., +ipfv., +past, {-pl., +III}], while -a (like -u-) specifically marks [+pass., +ipfv., +past, -pl., -III]. It is to be noted that this interaction must be reckoned as an EC-violation even though the suffixing of -a is optional and so allows for the occurrence of -n(-) without -a; this is so because the set of forms to which suffixation of -a could potentially apply is indeed properly included in the set of forms to which suffixation of -n(-) could and does apply. As regards the 3.pl. of the pass.imperf., on the other hand, a single counterexample to the EC arises from the conjunctive (+S,+G) application of two rules: first, specific suffixation of the previously mentioned -n(-) which marks [+pass., +ipfv., +past, {-pl., +III}], and, second, general suffixation of the (optional) -e that realizes the rather complex feature-set [{+pl., [+pass., +ipfv., {+III, [-pl., past[][][] (recall that, after -n(-), the occurrence of this -e is facultative).

In fact, the six remaining violations of the EC among the ModGrk pass.imperf. forms--which are found in the plural--all involve the conjunctive application (+S,+G) of some more specific rule with the abovementioned general rule suffixing -e (often optionally). Of these counterexamples to disjunctive ordering where there is an input proper-inclusion relation, one each occurs in the 1.pl. and 2.pl., while no fewer than four occur in the 3.pl. alone (i.e., four out of six possible EC-violations are here actual violations). Thus, in both the 1.pl. and 2.pl., the specific rule that suffixes -st as a marker of the features [+pass., +ipfv., +past, +pl., -III}] applies conjunctively with the seemingly ubiquitous general rule which suffixes (often optional) -e and (to repeat) marks [+pl., [+pass., +ipfv., +pl., +pl.]]. In the 3.pl., on the other hand, the four specific rules which apply conjunctively with (and before) this same general (but generally optional) rule suffixing -e are as follows. First, specific suffixation of -n- marks [+pass., +ipfv., +past, +pl., +III]; this -n- differs from the abovementioned homophonous suffix -n(-) because of their contrary placement relative to the suffix -t-, also previously

mentioned (in connection with the actv.imperf.)--which, second, is added by a rule specifically marking $[\{[+II, +pl., \{-pass., -ipfv.\}], [+III, +pass., +ipfv.]\}]$. Third, there is the specific suffixation of an -a marking $[+pass., +ipfv., \{[+past, \{+III, +pl.\}], [-past, -III, \{+I, optionally +II]\}]$. This -a element differs from its homophone, the abovementioned optional -a that marks [+pass., +ipfv., +past, -pl., -III], in both its non-optionality and its contrary placement relative to the suffix -n which, fourth, specifically realizes $[+pass., +ipfv., +past, \{-pl., +III\}]$ --yet again, conjunctively with the quasi-omnipresent general rule optionally suffixing abovementioned -e.

5. On the Implications of Meta-Templates in ModGrk & "Elsewhere".

Given that the preceding discussion of the imperfect paradigms for ModGrk verbs has documented eleven EC-violations among six passive forms, plus two among the corresponding actives, we conclude that, since there can be as many as thirteen counterexamples to the constraint in just twelve words (albeit morphologically quite complex ones), it is indeed the case that hyperanalytical pseudo-agglutinativity of the sort shown above is incompatible with the Elsewhere Condition--Q.E.D. Thus, if the morphological EC is to be maintained (as advocated by Anderson 1982ff., Kiparsky 1982ff., and many others), then the use of hypersegmentation to capture recurrent formal similarities across many words must also in fact be abandoned in favor of some notion like the meta-templates (a.k.a meta-redundancy-rules) of Janda & Joseph 1992a (and previous work).

Of course, it remains possible that, as is our own belief, there exists sufficient evidence in morphology to falsify--and hence compel the rejection of--not only pseudo-agglutinativity but also the EC (cf. Note 4). In advocating this position, we may perhaps be accused of wanting to have our cake and eat it, too [15]. But that is not the logic of the present situation--which, metaphorically, has to do with not one but two cakes. That is, the conclusion that we hope to have established here, via a consideration of facts from ModGrk verb-morphology (which could easily be supplemented with myriad further examples, from verbal and non-verbal categories in numerous other languages(') "elsewhere"--e.g., Sanskrit), is rather as follows. As soon as it is conceded that significant formal and functional identities across words should be captured and expressed by linguistic theory, it must be decided whether this purpose is better served by pseudo-agglutinative hypersegmentation into morphemes or by redundancy statements like meta-templates. If the EC is accepted as a constraint governing morphology, then meta-templates are the sole feasible option, since only they allow the expression of recurrent morphological partials without massive EC-violations. On the other hand, if the EC is rejected as a morphological constraint, then pseudo-agglutinativity need not, after all, be Hyperanalysis and the EC in morphology are thus like two abandoned. incompatible cakes of which it is possible to eat either or neither, but not both. However, if the EC is the confection that is chosen, then meta-templates become the indispensable icing on the cake.

Notes:

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- The 3.pl.pass.imperf. ending(s) -6-n-d-a-n-e actually has/have numerous variants; Newton's 1972:271-277 survey of 55 dialects, e.g., lists 30 different forms. A (small) number of these variants are frequently heard in the colloquial speech of educated Greeks, found in printed materials, and even cited in grammars (like Mackridge 1985:366); some of these alternatives to -6-n-d-a-n-e may actually be preferred by individual speakers of ModGrk (cf., e.g., Koutsoudas 1962:27n.11). Such variants do not arise solely due to the optional presence of final -e (indicated below via parenthesization), since the alternatives in question include not only -\(\delta\)-n-d-a-n(-e) [i.e., either -\(\delta\)-nd-a-n-e or '-o-n-d-a-n] but also -\(\delta-n-d-us-a-n\) and even -\(\delta-n-d-us-t-a-n\) (though the last of these is dialectally more limited and so much less frequent). Given the mismatch in voice, -us-ful pass.imperf. 3.pl. forms like γraf-ó-n-d-us(-t)-a-n 'they were written' probably do not reflect the stem-extending -ús- found in actv.imperf. verbs like fil-ús-a-n(-e) 'they were kissing'--which in turn has the variant fil-aγ-a-n(-e). Instead, Newton 1972:277 suggests that -6-n-d-us-a-n represents a blend of two earlier dialectal variants: viz., *-6-n-d-u-n(-e) (cf. current Megara -ódune) and *-ís-a-ne (innovated from the homophonous copular form meaning 'they were'; cf. current Kimi *óndisane*); he sees the -t- of -*ó-n-d-us-t-a-n* as due to the influence of the 2.pl. ending -t, as in $\gamma r \acute{a}f$ e-t-e 'you (all) write'. Ruge 1984, on the other hand, analyzes -óndusan as -ó-n-dus-an--which, being derived from underlying /6-n-tus-an/, seems to reflect the 3.pl.acc[usative]/gen[itive] pronoun tus 'them; their'. This analogy may seem rather unusual, but it receives support from the fact that -ó-mas-te and -ó-sas-te, the respectively 1.pl. and 2.pl. forms of the pass.imperf., contain elements which are clearly homophonous with mas and sas, the respective 1.sg. and 2.sg. acc./gen. pronominal forms. The ...mas... and ...sas... forms also have certain less standard-seeming variants which, like the 3.pl. forms just discussed, show ...n... and/or ...u... or ...a... (cf., e.g., ...m(-)a(-)s(-)t-u-n and ...-s(-)a(-)s(-)t-a-n).
- Admittedly, virtually every analysis of Spanish paseéis must recognize at least some monosegmental morphemes: e.g., minimally the -e- in the derivational stem pas-e- (cf. pas-a-r 'to pass', pas-o 'step', and pas-e-o 'stroll'). What makes Harris's 1987 analysis seem unnecessarily agglutinative is that, between this first e and the pres.subj.-marking second e, he posits an underlying /a/ (seen elsewhere as a conjugation-class or "theme" vowel; cf. pas-a-r) which must later be deleted. But, given other pres.subj. forms like 2.pl. proveáis (cf. pro-ve-e-r 'to provide'), where 'pres.subj.' is realized by a, a plausible alternative approach (considered and rejected by Harris 1969:72, but defended by Matthews 1974:140 and Janda 1989) derives the pres.subj.-marking vowel from the theme vowel via a morphological exchange-rule (regarding this notion in general, cf. Janda 1987: 297-407). On this analysis, Spanish paseéis appears at least somewhat less hyperagglutinative (= pas-e-é-i-s, rather than /pas+e+a+e+i+s /), though its non-root morphemes remain quite monosegmental. Still, it must be conceded that morphemic monosegmentality is a typological option indulged in heavily by certain languages (cf., e.g., Spruit 1987 on Abkhaz and Kuipers 1960 on Kabardian--two Caucasian tongues whose roots and affixes are highly monoconsonantal). On the other hand, J. Sadock's comment to us that even a Harrisian sixmorpheme analysis of Spanish paseéis would seem like near-analytic child's play to speakers of highly polysynthetic West Greenlandic (cf., e.g., Sadock 1991:82-100) need not go unanswered. We find it significant that languages of this extreme type tend to lack both the heavy monosegmentality and the multiple marking for the same morphosyntactic features which is sometimes attributed to Spanish (e.g., if paseéis contains '2.pl.' -i- as well as -s '2.') and which we discuss below with regard to verb inflection in ModGrk.
- [3] The Elsewhere Condition (EC) might better be called "Panini's Principle", since it is presupposed (though not explicitly formulated) in that great Indic grammarian's magnum opus; cf. Panini 500 BC / Katre (ed.) 1987:77: "The normal procedure adopted in framing ... rules ...is to state ... [first] the general rule (utsargâ)...[, then] the exception (apavadâ) ... which blocks the utsargâ within its particular domain" (see also Cardona 1976). Within generative grammar, the EC

was first proposed at the end of the '60's as a constraint primarily on phonological rules, apparently having been independently resuscitated from Panini by first Anderson 1969 and then Kiparsky 1973 (who named it "EC"). In the meantime, a similar version (more revealingly called "Proper-Inclusion Precedence") had been proposed by Sanders 1970 and extended to morphology and even syntax (cf. also the historical overview in Janda 1987:412-426). The influence of Sanders 1970 is reflected in Kiparsky's 1982 reformulation of the EC as a constraint on both phonology and morphology (see also Jensen & Stong-Jensen 1984), although Kiparsky 1983 broke new ground in recasting the EC as a semantic constraint titled "Avoid Synonymy". This version, however, has not been widely followed, either by Kiparsky 1984, 1985 or by others who have adopted similar principles of morphological disjunctivity (cf. Zwicky 1989, Andrews 1990, Stump 1991). While the main text here reflects Anderson's strong advocacy of a morphological EC since 1982, the opposite position is taken by Anderson 1977; other works which present arguments against attributing morphological relevance to the EC (as opposed to "Blocking"; see below) include Janda & Sandoval 1984, Mohanan & Mohanan 1984, Janda 1987:409-599, Halle 1991, Janda 1991, forthcoming.

- [4] The counterexamples to the EC adduced by Janda & Sandoval 1984 and Janda 1987:409-599 include 14 instances where conflicting specific rules and general rules apply conjunctively (9 cases with +S,+G, and 5 with +G,+S). E.g., in certain varieties of Late Old Provençal (cf. Grandgent 1905:146, Janda 1987:472-473, and other references there), the past subjunctive was signaled by suffixation not only of specific -/s / (= [+subj., +past]) but also of general -/a /, which marked both [+subj., +past] and the present subjunctive of the so-called 2nd and 3rd verbal conj[ugation]s (= [+subj., -past, -conj.1]), as well as the "old" conditional. Thus, from the stem *vend-e-* 'sell' was conjunctively formed past.subj. *vend-e-*/s-a / (with +S,+G, replacing the +S,-G of Early Old Provençal *vend-e-*/s /). As for rule interactions which appear to obey the morphological EC, Janda & Sandoval 1984 and Janda 1987:409-599 argue that these can be attributed instead to "stipulated disjunctivity". This notion is independently required for the disjunctive application of morphological rules not standing in a general-vs.-specific relationship (cf., e.g., Anderson 1982ff. on Georgian, where the verbal marking of a 1st-person subject via the prefix *v* is disjoined only by the marking of a 2nd-person object via the prefix *g*-).
- **[5]** Regarding Paninian "Blocking", cf. Kielhorn 1887/1972:125 on the concept of *nipatana*: "...[b]y incidentally employing a word or any form whatever, Panini shows that that word or that form is correct, and, if such a word or form should happen to be contrary to any rule of his, that rule must, in this particular instance, be understood to be superseded. The incidental employment of a word or form is thus like a special rule superseding a general rule." For a discussion of numerous mid-20th century works which revive this notion, see Janda 1987:446.
- [6] A less extreme (hyper)analysis would recognize at least two morphemes -a(-) and two morphemes -e(-), as follows: -a(-)[+I, -pl., +past, ...] vs. -a(-)[+pl., +past, ...], and -e(-)[-I, -pl., +past, ...]+past, ...] vs. -e(-)[+pl.] (since -e is at least optionally a final suffix that marks plurality in all tenses, aspects, and voices; cf. below). A more extreme hyperanalysis, though, might not only posit a single -e(-) for the aforementioned categories, but also assign to it yet other -e(-)'s that mark various additional feature-combinations: e.g., a pass.ipfv. -e that is [-past] and only [+II(ndperson)]. It should also be noted that there are various ways in which the ModGrk imperfective aspect is more marked than the perfective, at least in the past (so that the pass.past.ipfv. is formally the most marked paradigm in the entire verb-system, at least in its idio- and dia-lectal variability), and this is why we have chosen to express these categories via the feature [±ipfv.], with the perfective being [-ipfv.]. Such an analysis is consistent with the correlation between markedness and plus values in our labeling of features and feature values for nearly all other verbal categories of ModGrk (see also Note 12 below). The sole exception involves our employment of the feature [±III]: even though the third person can be expressed as [-I, -II], the utility of [-III] as an abbreviation for [{+I, +II}] leads us also to employ [+III], in spite of its clearly unmarked nature vis-à-vis [+I] and [+II] (cf., e.g., Benveniste 1946). In defense of this practice, it can be pointed out that either [+I] or [+II] may be more marked than the other in the system of a

particular language (e.g., many verbal paradigms of German and especially Spanish oppose unmarked [{+I, +III}] vs. marked [+II]), but there is no way to express this using a single plus/minus-feature. Indeed, morphologists like Zwicky 1989 view not only person-features but also many others as at least potentially n-ary-valued (e.g., [person:1] vs. [person:2] vs. [person:3]).

- [7] Two existing pseudo-agglutinative treatments of ModGrk verb-morphology employ stratagems which, though they do not explicitly mention the EC, reflect some effort to avoid violating it. Neither attempt, however, can be judged successful. In his (hyper)segmentation of the endings -a-me, -a-te, and -a-n(e), Matthews 1967 simply ignores the recurrent -e, uncharacteristically analyzing it as merely a segment in the unitary morphemes -me, -te, and -n(e) (contrasting with maximally factored 2.sg. -e-s). Philippaki-Warburton 1973 makes 3.pl. -a-n(-e) unproblematic by treating its optional -e as the result of a phonological paragoge-rule, but this rule cannot be purely phonological, since it does not apply obligatorily after final n in native nouns (like gen.pl. anthrópon 'of men') or in recent loanwords (like púlman 'charter-type bus', from English Pullman [train-car])). In any case, Philippaki-Warburton's derivations for 1.pl. -(a-)m-e and 2.pl. -(a-)t-e require two clear violations of the EC (along with several others in the rest of her treatment of ModGrk verbs). In contrast, the structuralist accounts of Koutsoudas 1962 and Householder, Kazazis, & Koutsoudas 1964 treat -ame, -ate, and -an(e) as unitary endings--thus appearing to presuppose some notion like the meta-templates advocated here.
- [8] The term "meta-template" may be more tractable, but the alternative label "meta-redundancy-rule" actually reflects more accurately the fact that such meta-statements often express only partial similarites between morphological entities like rules or lexical items (i.e., morphemes and words), just as the phonological redundancy-rules of Stanley 1967 can show the shared subset of predictable features in the initial consonants of English morphemes like *stay*, *still*, etc. Strictly speaking, then, we should preferably speak of "partial (meta-)templates" (cf. Janda & Joseph 1992a).
- [9] The resources on which we have drawn for our treatment of the ModGrk imperfect include the following studies either wholly or partially devoted to Greek verbal morphology: Seiler 1952, Koutsoudas 1962 (cp. Swanson 1964), Matthews 1967, Kazazis 1968, Philippaki-Warburton 1970a,b (cp. Newton 1973b), Adams 1972, Babiniotis 1972, Newton 1972, Ruge 1972, Newton 1973a, Philippaki-Warburton 1973, Newton 1975, Philippaki-Warburton 1976, Daltas 1979, Joseph 1980, Nyman 1981, Ruge 1984, Joseph 1988, 1990, Smirniotopoulos 1990, and Joseph & Smirniotopoulos 1992. Among the more recent general ModGrk grammars relevant for this paper are the descriptive or prescriptive works in the following list: Pring 1955 (cp. Georgacas 1958), Mirambel 1959, Householder, Kazazis, & Koutsoudas 1964, Babiniotis & Kontos 1967, Tzermias 1969 (cp. Newton 1971), Triandaphyllidis 1975, Triandaphyllidis et al. 1976, Browning 1983, Eleftheriades 1985, Mackridge 1985, and Joseph & Philippaki-Warburton 1987. Older relevant overall grammars of ModGrk are those by Chatzidakis 1892, Thumb 1912, Roussel 1922, Pernot 1930, Triandaphyllidis 1941, Kahane, Kahane, & Ward 1945-1946, and Mirambel 1949.

- [11] Admittedly, many speakers of ModGrk have a nasal-less, pure-stop realization [d] for the underlying sequence /nt/, so that a hyperanalysis with /-n-t-/ involves some abstractness. Still, the identification of a /t/ morpheme here has substantial justification, particularly given (i) the usual methodological assumptions leading to hyperanalysis and (ii) the independent existence of a general process allowing for a nasal-less, voiced-stop realization of /nt/ even at more robust junctures: e.g., between the acc.sg. weak pronoun *ton* 'him' and a *t*-initial verb like *táraksan* 'they disturbed', where /ton + tá... / > [to(n) + dá...] (on the optional nasal-loss here, cf. Arvaniti & Joseph 1993).
- [12] The underspecification of features and feature values which is now dominant in phonology (cf., e.g., Archangeli 1988) has recently been extended to morphology in works like Farkas 1990 and Lumsden 1992. On this approach, a featural contrast like [±plural] receives a privative reinterpretation such that, underlyingly, the only available opposition involves marked [+plural] vs. unmarked [0plural] (i.e., [plural] vs. Ø), with the surface-value [-plural] being derived by a default rule. If this practice were followed here in the formulation of the rules for the ModGrk verbal imperfect, the principal result would be to increase the (appearance of) generality in the already general rules given in the main text. In short, making extensive use of morphological underspecification in our analysis would in no way diminish the degree to which a pseudoagglutinative hyperanalysis of inflectional morphology results in massive violations of the EC.
- [13] We have not done so here, but analyzing the pass.imperf. forms in ...maste and ...saste according to Ruge's 1984 pronominal analysis, which isolates -mas- and -sas- (cf. Note 1), would force us to assign -s- and -t- to separate morphemes and so add another suffix-position. The existence of related but contrasting pronominal forms would suffice to ensure the internal segmentation of (-)m-a-s(-) and (-)s-a-s(-); cf., e.g., m-u 'my', s-u 'your (= thy)', and t-u-s 'their'.
- [14] G. Pullum has encouraged us to beware of attacking pseudo-agglutinativity based on arguments from rule-ordering that indulge in "miso-Koutsoudianism", especially "hyposimultaneity". That is, works from the "Indiana" approach to rule ordering--represented in volumes like Koutsoudas (ed.) 1976 (cf., too, Pullum 1976)--have shown that arguments for or against a particular sequential rule-ordering are invalid unless they also consider the possibility of simultaneous application for two or more processes. This conclusion is undeniably true (though too often ignored) in phonology, but it is not obviously relevant to rule interactions which bear on the EC in morphology. This is because most morphological rules involve affixation or other additive processes that are not inherently incompatible--and so disjunctivity between two generalizations usually cannot be achieved via the (counter)feeding or (counter)bleeding effects of two simultaneously-applying rules. Thus, even--perhaps especially--in cases of simultaneous ruleapplication, there must apparently exist at least some extrinsic ordering of morphological processes (at least positionally, in terms of where their output is realized), and statements of their dis- or conjunctivity seem also to be required. The only possible exception to this statement involves so-called "position classes", but even that mechanism presupposes stipulations, as it were, regarding the ordering and compatibility of (the outputs from) morphological rules (cf. Janda [forthcoming]). Our arguments here against hyperanalytic pseudo-agglutinativity would thus engage not in hypo- but in hyper-simultaneity if they attempted to recast disjunctivity and conjunctivity in terms of simultaneous rule-application in morphology. Furthermore, because our present use of meta-templates as a means of avoiding hypersegmentation (as well as morphological EC-violations) follows Koutsoudas's 1962 practice of analyzing many ModGrk verb-endings as monomorphemic rather than polymorphemic (cf. Note 7 above), our approach in this paper actually represents (if we may answer Pullum's two sesquipedalianisms with yet another of our own) not miso- but philo-Koutsoudianism!
- [15] The present form of this proverb makes little sense: having a cake that can't be eaten is not only not presumptuous; it's useless. More sensible is the proverb's original form (cf. Heywood 1549 / Habernicht 1963), which suggests that it is excessive to want to eat a cake and have (keep) it afterwards (e.g., in order to eat it again): "Would ye both eat your cake and have your cake?".

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[Abbreviations used: "CLS" = Chicago Linguistic Society, "Dept." = Department, "diss." = dissertation, "edit." = edition, "ESCOL" = Eastern States Conference on Linguistics, "IULC" = Indiana University Linguistics Club, "Lg." = Language, "LI " = Linguistic Inquiry, "LSA" = Linguistic Society of America, "ModGrk" = Modern Greek, "NLLT " = Natural Language & Linguistic Theory, "OSU" = Ohio State University, "P." = Press, "U." = University, "&" = and. (A phonemic transcription is used for all ModGrk words except names with an established anglicization.)]

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