Of abundance and scantiness in inflection: A typological prelude

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1. The differences between *el* and *manus*

Tables 1 and 2 set out the inflected forms of the nouns for 'hand' in Turkish and Latin, *el* and *manus*, and give the meaning of each form at the head of the appropriate column and at the left-hand side of the appropriate row. What are the significant structural properties of such sets of inflected words as represented in these paradigms? It would seem rather insignificant that both paradigms are two-dimensional matrices, for they could easily have been laid out differently — one- or three-dimensionally, for example. As long as all inflected forms are enumerated and the meaning of each is properly identified, the mode of their arrangement might seem purely conventional. More significant are perhaps some points on which our two paradigms differ.

There is first of all, an obvious difference in size: the Turkish paradigm is much larger than the Latin one, containing 84 as opposed to 12 members. While *el* and *manus* both inflect for Number and Case, with an equal number of terms realising these categories in the two languages (two Numbers, six Cases), *el* in addition inflects for Possession, distinguishing Possessors by Person (1st, 2nd, 3rd) and Number (Singular and Plural) — for which purpose Latin has separate pronouns. If the Turkish paradigm in Table 1 is divided into subparadigms according to this additional distinction, the subparadigm of Unpossessed forms (i. e. the leftmost column) is as large as its Latin counterpart. Both can in turn be divided, again with identical results, into two Number subparadigms for Case and six Case subparadigms for Number.

As to the inflectional categories shared by *el* and *manus*, the terms realising them are identical, except that *el* has a Locative while *manus* has a Vocative. Identical term names, however, do not always imply identical uses of the respective forms. The Turkish Nominative (also known as Absolute), for example, also marks direct objects as long as they are indefinite, in which function Latin nouns are in the Accusative; or the Turkish Singular, perhaps more appropriately characterised as numerically neutral, is the usual form of nouns accompanied by numerals, where Latin nouns are in the Plural.

Table 1. Inflection of Turkish *el* 'hand'

		UnPoss	1sgPoss	2sgPoss	3sgPoss	1plPoss	2plPoss	3plPoss
Sg	Nom	*el*	*elim*	*elin*	*eli*	*elimiz*	*eliniz*	*elleri*
	Acc	*eli*	*elimi*	*elini*	*elini*	*elimizi*	*elinizi*	*ellerini*
	Gen	*elin*	*elimin*	*elinin*	*elinin*	*elimizin*	*elinizin*	*ellerinin*
	Dat	*ele*	*elime*	*eline*	*eline*	*elimize*	*elinize*	*ellerine*
	Loc	*elde*	*elimde*	*elinde*	*elinde*	*elimizde*	*elinizde*	*ellerinde*
	Abl	*elden*	*elimden*	*elinden*	*elinden*	*elimizden*	*elinizden*	*ellerinden*
Pl	Nom	*eller*	*ellerim*	*ellerin*	*elleri*	*ellerimiz*	*elleriniz*	*elleri*
	Acc	*elleri*	*ellerimi*	*ellerini*	*ellerini*	*ellerimizi*	*ellerinizi*	*ellerini*
	Gen	*ellerin*	*ellerimin*	*ellerinin*	*ellerinin*	*ellerimizin*	*ellerinizin*	*ellerinin*
	Dat	*ellere*	*ellerime*	*ellerine*	*ellerine*	*ellerimize*	*ellerinize*	*ellerine*
	Loc	*ellerde*	*ellerimde*	*ellerinde*	*ellerinde*	*ellerimizde*	*ellerinizde*	*ellerinde*
	Abl	*ellerden*	*ellerimden*	*ellerinden*	*ellerinden*	*ellerimizden*	*ellerinizden*	*ellerinden*

Table 2. Inflection of Classical Latin *manus* 'hand'

	Sg	Pl
Voc	*manus*	*manu:s*
Nom	*manus*	*manu:s*
Acc	*manum*	*manu:s*
Abl	*manu:*	*manibus*
Dat	*manui:*	*manibus*
Gen	*manu:s*	*manuum*

The completeness of our two paradigms is a matter of controversy, although for different reasons. For Turkish, one might consider adding a seventh and perhaps even an eighth Case, a Comitative-Instrumental expressed by *-le/-yle* and a Benefactive in *-çin/-yçin*. These putative Case suffixes resemble postpositions, *ile* 'with' and *için* 'for', following nouns in syntactic construction, but, although evidently originating from these diachronically, show some signs of being in morphological construction with their nouns: for example, their first vowel may be elided, and the remaining one is subject to vowel harmony. (Unlike other Case suffixes, however, these are unaccented.) Turkish, further, has a suffix *-ki* which forms nouns (sometimes called pronouns) from Genitives, Locatives, or adverbs, which may then be inflected for Number and Case (e. g. *eliminkilerden* 'from those belonging to my hand'). The inclusion of all these forms would greatly expand the paradigm of *el*, and it is not self-evident that *-ki* is derivational rather than inflectional and should therefore be excluded. For Latin, one might consider adding a Locative as a seventh Case, at least in the Singular subparadigm, not because *manus* would have a further inflectional form with locative meaning, but on the strength of at least one other noun which otherwise tends to inflect like *manus* but has (or had in pre-Classical times) a Locative Singular form distinct from its other inflected forms, viz. *domus* 'house' — *domi:* 'at home' (later replaced by the Dative, *domui:*).[1]

For each inflectional category in Table 1 there is one term without overt exponent: the Singular Number, the Nominative Case, and Unpossessed. Among the Possessed forms, the Singular of 1st and 2nd Person Possessors too is without overt exponent for Number, lacking the *-iz* of the corresponding Plural Possessors. (Matters are somewhat more complex with 3rd Person Possessors; and among the three Persons, none is without exponent.) In Latin, the Plural forms of *manus* are more substantial than the corresponding Singulars, measured in sound segments or vowel quantity, but the Singular does not lack overt exponence. Nor is there a single Case which could

plausibly be said to be without exponent. In the Singular subparadigm the Ablative might be taken for such a zero form, but this would entail the complication of how to get rid of the length of its final vowel when *-s*, *-m*, and *-i:* are added for the Vocative/Nominative, Accusative, and Dative. The citation form of this Latin noun, the Nominative Singular, is certainly not stripped of all inflections; its Turkish analogue, the Nominative Unpossessed, is.

Morphemic segmentation is unequivocal in the paradigm of *el*, but not in that of *manus*. The largest invariant segment in Table 1, *el*, is easily identified as the stem of this noun, and it uniformly serves as the base of all inflections. Segmentation in Table 2 would seem to yield two such basic forms, *manu-* and *man-*, with the final vowel that distinguishes them perhaps best analysed as a stem formative, absent in the Ablative/Dative Plural. An alternative analysis, not to be rejected out of hand, would segment thus: *man-us*, *man-um*, *man-u:*, etc., with *u* as part of most exponents of Number and Case. On this analysis the inflection of Latin *manus* would be single-stemmed, like that of Turkish *el*.

Even though in Latin it may at times be more difficult to locate the boundary between stem and inflection, the phonological cohesion between these morphemic segments seems about as strong in Latin as it is in Turkish. Phonologically the stem and the inflections of *el* as well as of *manus* represent single words, as shown by sandhi phenomena, phonotactics, accent, and the like. In Turkish, where the distinction between (morphologically bound) suffixes and (phonologically bound) enclitics may in general be less clear than in Latin, only the former (though not all of them) are subject to the requirements of vowel harmony, and all inflections included in Table 1 meet this criterion of phonological cohesion. In non-phonological respects, however, the bonds between stems and inflections are weaker in Turkish than in Latin. Thus, while a Latin noun holds on to its inflectional ending when followed by another noun in a close coordinate construction inflecting for the same Number and Case, a Turkish noun may shed its inflections in such circumstances: *el ve ayaklarımı* (or, less elliptically, *ellerimi ve ayaklarımı*) 'my hands and feet' (Accusative), *manu:s et pede:s* (not *man(u) et pede:s*). Likewise, adjectives on their own in Turkish inflect like nouns, but when an attributive adjective is followed by a noun (which is the regular order) it loses its inflection, so that again only the final inflectable member of the nominal group is inflected: *küçüklerimi* 'my small ones', *küçük ellerimi* 'my small hands' (Accusative). In Latin all members of a nominal group which can be inflected must be inflected; thus: *parva:s manu:s* or *manu:s parva:s*, not *parv manu:s* or *man(u) parva:s*. A further indication of the relative looseness of the morpho-

logical combination of stems and inflections in Turkish is the ability of these inflections to co-occur with entirely different parts of speech, such as participles and finite verbs when these are the last words of clauses in subject, object, or adverbial function.

What follows the stem (plus perhaps stem formative) of *manus* cannot be further morphemically segmented in any consistent manner. There are, thus, no separate exponents for Number and for Case; these two categories are expressed cumulatively in a single ending instead. The inflected forms of *el*, by contrast, can be analysed as consisting of separate morpheme for the various categories, strung out in several positional classes after the stem: first come exponents of Number (in fact only Plural, since Singular lacks overt expression), then of Person and of Number of a Possessor (Unpossessed lacks an exponent), then of Case (other than Nominative, which likewise has no exponent). This neat picture is only disturbed by Plural nouns with 3rd Plural Possessor ('their hands'), which coincide with both Singular noun forms ('their hand') and Plural nouns with Singular Possessor ('her/his hands'), and hence appear to lack a separate suffix either for nominal Plural (*el-Ø-ler-i*) or for Plural of Possessor (*el-ler-Ø-i*). A further complication, though on the face of it not one suggesting cumulation, is introduced by 3rd Plural Possessed forms: when compared to 3rd Singular Possessed forms, two suffixes seem segmentable for Number (*-ler*) and Person (*-i*) of the Possessor — but these are not in the same order as with 1st and 2nd Person Possessor, where Person (*-im*/*-in*) precedes Number (*-iz*) of the Possessor.[2]

In our examples the length of inflectional morphemes does not exceed two syllables, with Ablative/Dative Plural *-ibus* in Latin perhaps being the longest; and on the assumption that this relative uniformity is not coincidental, one would expect words with separatist inflectional exponents to be potentially longer than their counterparts with cumulative exponents — and the more so, the more categories are involved. Moreover, with the separatist technique and its inclination to leave certain terms unexpressed, different inflected forms of a word are bound to differ in length, measured in syllables. The cumulative technique may produce similar patterns, but should do so less systematically. The potentially greater length of separatistically inflected words is compensated for by greater economy in the supply of exponents. Comparing the Number and Case forms of *manus* with their analogues in the Unpossessed subparadigm of *el* (the leftmost column in Table 1), they both number twelve — two Numbers multiplied by six Cases. However, Turkish only needs two Number exponents plus six Case exponents to express all these categorical distinctions; and the sum total of eight can even be reduced by two since Singular Number and Nominative Case lack overt exponents.

To accomplish the same feat Latin would need two times six exponents, the sum total resulting from multiplying rather than adding the terms of the categories cumulated. (In actual fact, *manus* has only seven distinct exponents, but, as Table 2 shows, these do not suffice to express all categorial distinctions.) For the entire paradigm in Table 1, with 84 cells, Turkish would ideally need only ten distinct exponents, and it is self-evident that our enumeration of forms in this table is highly redundant. It would suffice to give the exponent of each term only once:

Number: Pl *-ler* (Sg -Ø);
Case: Acc *-i*, Gen *-in*, Dat *-e*, Loc *-de*, Abl *-den* (Nom -Ø);
Person of Possessor: 1 *-im*, 2 *-in*, 3 *-i* (UnPoss -Ø);
Number of Possessor: Pl *-iz* (Sg -Ø);

and to specify the relative linear order in which these categories are to be expressed after a stem. Isolated complications marring the tidiness of such systems, such as those with 3rd Plural Possessors noted above, would demand additional instructions overriding the regular meaning-form assignments (e. g. 3plPoss *-leri*, Pl3plPoss *-leri*). Owing to the cumulative technique, there is no way of reducing Table 2 for Latin analogously: here the more complex structuring of the set of inflectional exponents into subparadigms for each of the cumulated categories is not redundant but essential.

Tables 1 and 2 both show instances of single forms expressing more than one meaning (or meaning combinations). In Turkish, *el* has 58 rather than 84 distinct inflected forms; in Latin, *manus* has 7 distinct forms rather than 12.[3] Relatively speaking, *manus* economises more heavily than *el*, fielding only 58.33%, as opposed to 69.05%, of the team of inflected forms it could potentially muster up. If *manus*, as it were, decided to discontinue expressing any single further categorial distinction (say that between Ablative and Dative Singular), this would automatically reduce the number of its exponents by one, regardless of whether one of the previous distinct exponents (*-u:* or *-ui:*) is re-used or a new one (say *-o:*) is replacing both. By contrast, *el* would not gain anything from such obliterations of minimal categorial distinctions: if, for instance, one wanted to conflate Dative and Ablative Singular Unpossessed, the overall number of exponents would remain the same if *-e* or *-den* were used for this purpose, or would even increase by one if a new exponent were used — as long as Dative and Ablative continued to be distinguished by *-e* vs. *-den* in the Plural Unpossessed and the Singular and Plural Possessed forms. It matters, thus, whether exponents are cumulative or separatist if distinctions are to be undone.

With *manus* there is one categorial distinction made in Table 2 that is not reflected by a formal contrast in any subparadigm, and hence might seem gratuitous: that of Vocative and Nominative. Nominative and Accusative, and Ablative and Dative, both pairs conflated in the Plural, are distinguished in the Singular; and Genitive Singular, conflated with Vocative/Nominative/Accusative Plural, is distinguished from Genitive Plural as well as from other Cases in the Singular. With *el*, on the other hand, all of the categorial distinctions unexpressed in some environments are expressed in others: the six Cases are distinguished everywhere, the two Numbers in all Unpossessed and most Possessed forms, the three possessor Persons as well as Unpossessed in the Absolutive Singular and Plural and partly also elsewhere, the two possessor Numbers in all Singular noun and all 1st and 2nd Person possessor Plural noun forms.

The formal identities in the set of inflected forms of *manus* cannot plausibly be accounted for in terms of synchronic Classical Latin phonology or morphophonology; their pattern is one that needs to be stated in morphological terms. There are apparently similar identities in the inflection of *el*: in particular those between Accusative *-i* and 3rd Singular Possessed *-i* (hence *eli* SgUnPossAcc/Sg3sgPossNom, *elleri* PlUnPossAcc/Pl3sgPossNom) and between Genitive *-in* and 2nd Singular Possessed *-in* (hence *elin* SgGenUnPoss/Sg2sgPossNom, *ellerin* PlUnPossGen/Pl2sgPossNom). The majority of the identities in Table 1, however, are accidents of Turkish phonology and morphophonology, rather than genuinely morphological characteristics of the inflection of *el*. Morphologically, one expects the Plurals of 3rd Plural Possessed forms to be *el-ler-leri*, *el-ler-lerin-i*, etc., and it is evidently owing to the haplological elimination of one *ler* that they come out as *elleri* etc., identical to Singulars. The 3rd Person Possessor suffix *-i* appears as *-in* when followed by a Case suffix, and this allomorph looks like 2nd Person Possessor *-in*, hence the identities of 3rd and 2nd Person Possessed forms in Cases other than (exponentless) Nominative. What does not quite look like a non-morphological accident is the partial identity of Plural *-ler* and 3rd Plural Possessed *-leri* (perhaps to be segmented as *-ler-i*), which causes Plural nouns for 3rd Singular Possessor to coincide with Singular nouns for 3rd Plural Possessor (*el-ler-i* hand-Pl-3sgPoss — *el-leri* hand-3plPoss). This might still be considered an inadvertent consequence, though not of (morpho-)phonology, but of the failure of Person and Number exponents of the 3rd Person Possessor to be sequenced like those of 1st and 2nd Person Possessors, where Number comes after Person.

Something which cannot be inferred from Tables 1 and 2 is that *el* is far more representative of the entire nominal inflection of Turkish than *manus* is

of that of Classical Latin. As a matter of fact, the exponents for Number, Case, and Person and Number of Possessor are not always the same as those seen in Table 1 for all Turkish words inflecting for these categories. However, the choice among alternative exponents expressing the same meanings is to a large extent conditioned by their phonological environments, and never by morphological classifications of noun stems. All exponents of Table 1 come in two (*-ler|-lar*, *-de|-da*, *-den|-dan*) or four forms (*-i|-ü|-ı|-u*, etc.), with their vowels required to harmonise, in frontness/backness and (the fourfold suffixes) rounding, with the last vowel of their base. Of Case suffixes with initial vowel, those of Accusative and Dative add *y* and that of Genitive adds *n* when preceded by a vowel, thus avoiding hiatus (cf. *gece* 'night' SgNom, *geceyi* Acc, *gecenin* Gen, *geceye* Dat). The initial consonants of Locative and Ablative *-de* and *-den* are devoiced after a voiceless consonant (thus, *kitap* 'book', belonging to the class of nouns which voice their final consonant when it precedes a vowel, *kitabı* Acc, *kitapta* Loc, *kitaptan* Abl). The suffixes of 1st and 2nd Person Possessor drop their initial vowel, and that of 3rd Person Singular adds *s*, when following a vowel (thus, *gecem*, *gecen*, *gecesi* 'my, your, her/his night'); unlike *el*, vowel-final stems therefore consistently distinguish 2nd and 3rd Singular Possessor in Singular forms: *gecen* Nom, *geceni* Acc etc. vs. *gecesi*, *gecesini* etc. And, the single instance of morphological conditioning, 3rd Person suffixes *-i|-si|-leri* add a final *n* when followed by a Case suffix.[4] All these exponents occur in the same variations also with adjectives when used on their own, and, with minor modifications, with personal, demonstrative, and interrogative pronouns as well. The 1st Person personal pronoun has Genitive *-im* instead of *-in*; its Plural as well as that of 2nd Person is in *-iz* (as in Possessed nouns) rather than in *-ler*;[5] and interrogatives may or may not use *-i* for Accusative, which Case may thus coincide with Nominative. The scope of the application of Person and Number exponents is even wider since they are also used, albeit with additional alternations, as Person and Number markers of verbs. Notwithstanding their superficial variety, the paradigms of different words, at least within the nominal sphere, do not differ from one another on any of the parameters on which Turkish *el* was seen to differ from Latin *manus* — except accidentally, as in the case of nouns such as *hat* 'line', which retain their final geminate consonants prevocalically and simplify them elsewhere, and thus, by phonological chance, fail to distinguish Dative and Locative Singular (*hatt-a* Dat, *hatt-ta* Loc).

Latin inflection is far less uniform, and allomorphs of exponents, often so dissimilar as not to be relatable to one another phonologically, are largely conditioned by their morphological environment, in particular by the stems

Table 3. Classical Latin noun declensions

		I_F	II_M	II_N	$IV_{M/F}$	IV_N
Sg	Voc	*capra*	*lupe*	*bellum*	*manus*	*cornu:*
	Nom	*capra*	*lupus*	*bellum*	*manus*	*cornu:*
	Acc	*capram*	*lupum*	*bellum*	*manum*	*cornu:*
	Abl	*capra:*	*lupo:*	*bello:*	*manu:*	*cornu:*
	Dat	*caprae*	*lupo:*	*bello:*	*manui:*	*cornu:*
	Gen	*caprae*	*lupi:*	*belli:*	*manu:s*	*cornu:s*
Pl	Voc	*caprae*	*lupi:*	*bella*	*manu:s*	*cornua*
	Nom	*caprae*	*lupi:*	*bella*	*manu:s*	*cornua*
	Acc	*capra:s*	*lupo:s*	*bella*	*manu:s*	*cornua*
	Abl	*capri:s*	*lupi:s*	*belli:s*	*manibus*	*cornibus*
	Dat	*capri:s*	*lupi:s*	*belli:s*	*manibus*	*cornibus*
	Gen	*capra:rum*	*lupo:rum*	*bello:rum*	*manuum*	*cornuum*
		'goat'	'wolf'	'war'	'hand'	'horn'

		$V_{F/M}$	$IIIa_{M/F}$	$IIIa_N$	IIIab	$IIIb_{M/F}$	$IIIb_N$
Sg	Voc	*die:s*	*re:gs*[a]	*no:men*	*urbs*	*ignis*	*mare*
	Nom	*die:s*	*re:gs*	*no:men*	*urbs*	*ignis*	*mare*
	Acc	*diem*	*re:gem*	*no:men*	*urbem*	*ignem*	*mare*
	Abl	*die:*	*re:ge*	*no:mine*	*urbe*	*igni:*	*mari:*
	Dat	*diei*	*re:gi:*	*no:mini:*	*urbi:*	*igni:*	*mari:*
	Gen	*diei*	*re:gis*	*no:minis*	*urbis*	*ignis*	*maris*
Pl	Voc	*die:s*	*re:ge:s*	*no:mina*	*urbe:s*	*igne:s*	*maria*
	Nom	*die:s*	*re:ge:s*	*no:mina*	*urbe:s*	*igne:s*	*maria*
	Acc	*die:s*	*re:ge:s*	*no:mina*	*urbi:s*	*igni:s*	*maria*
	Abl	*die:bus*	*re:gibus*	*no:minibus*	*urbibus*	*ignibus*	*maribus*
	Dat	*die:bus*	*re:gibus*	*no:minibus*	*urbibus*	*ignibus*	*maribus*
	Gen	*die:rum*	*re:gum*	*no:minum*	*urbium*	*ignium*	*marium*
		'day'	'king'	'name'	'town'	'fire'	'sea'

Note: [a] Orthographically *rex*. Otherwise Latin orthography is used, with the addition of vowel length.

to be inflected. There is some phonological conditioning as well, although usually only within the confines of particular inflection classes. Thus, Nominative and Vocative Singular, for instance, tend to be zero rather than *-us* when nouns of Declension II (see Table 3) end in *-er* (cf. *puer* 'boys' vs. *lupus/lupe* 'wolf'); Nominative Singular is zero rather than *-s* when nouns of Declensions IIIa/IIIab end in *l/r/n/s* (cf. *consul* 'consul' vs. *re:gs* 'king'); Vocative/Nominative/Accusative Singular is zero rather than *-e* when neuters

of Declension IIIb are polysyllabic and end in *l/r* (cf. *animal* 'animal' vs. *mare* 'sea'); Genitive Plural is *-um* or *-ium* with nouns of Declensions III differing in stem-final vowels and consonants, but the relevant phonological distinctions are so intricate that this alternation is perhaps better treated as morphologically conditioned (hence the different classes in Table 3). As to other parts of speech inflecting for Number and Case, adjectives, themselves heterogeneous like nouns, largely follow nominal patterns, though not always slavishly, while the various kinds of pronouns increase the diversity of exponents. Some nominal exponents recur in verbal inflection, but fortuitously so since verbs do not share inflectional categories with nouns, as they do in Turkish (e. g. Latin *-i:*, expressing Genitive, Dative, Ablative Singular, or Vocative or Nominative Plural with nouns, serves as 1st Person Singular Perfect Indicative Active with verbs).

Whereas one-to-many relations between inflectional meanings and forms can essentially be accounted for by general phonological and allomorphic regularities in Turkish, they are traditionally dealt with in Latin by dividing the words inflecting for the same categories into several classes, with arbitrarily (i. e. neither phonologically nor semantically) determined membership, and further subclasses, with membership determined, somewhat less arbitrarily, by Gender, and by spelling out the full set of inflectional forms for each of these classes and subclasses, regardless of partial similarities. Table 3 illustrates, perhaps not quite exhaustively, the Classical Latin noun declensions, omitting the controversial Locative, phonologically conditioned zero alternants (as mentioned above), and a good deal of synchronic variation in the shape of some exponents. The noun inflection of Latin is, thus, clearly more complicated than that of Turkish, involving subparadigms (shown above to be redundant for Turkish) as well as inflection classes and requiring lexical stipulations of class membership for each noun.[6]

Moreover, while consistently favouring cumulative rather than separatist exponence and tightly bound morphological combinations, these classes differ among one another on some of the parameters so far examined. Thus, increasing the size of the paradigm by the inclusion of a Locative seems better motivated in some classes than in others, owing to the existence of forms which are actually distinct from those of all other Cases (e. g. *domi:* 'at home' from Declension IV); and the setting up of a paradigmatic distinction in the first place is more immediately suggested by some classes than by others (e. g. that between Vocative and Nominative, for which only Declension II provides distinct forms in the Singular). Some classes include a form, viz. Nominative Singular, which is without overt exponent, if only as one alternative in certain phonological contexts (i. e. nouns like *puer*, *consul*, *animal*

of Declensions II and III). Such zero forms facilitate morphemic segmentation and the identification of a single base. But there are other classes where inflection is evidently double-stemmed (cf. *no:men/no:min* from Declension $IIIa_N$, or, not susceptible to phonological treatment, *iter/itineris* 'way' (Nom/GenSg), *iecur/iecinoris* or *iecoris* 'liver' (Nom/GenSg), *nix/nivis* 'snow' (Nom/GenSg))[7] and where the boundary between stem and inflection is more difficult to locate (e. g. in *aeta:s* 'age', otherwise inflecting like *re:gs*, the stem-final consonant, audible in *aeta:tis* etc., appears to be absorbed by the inflection). While none of the eleven classes in Table 3 can boast twelve distinct forms, none conflates Case and Number distinctions in exactly the same manner as *manus* does, either. All these paradigms are, at any rate, completely filled with forms, even if these are not always distinct or are unlikely to have been heavily used. This cannot be said for all nouns of Latin, relatively many of which simply appear to lack an appropriate form for one or another Case or Number for no especially convincing semantic or pragmatic reasons (e. g. *faex* 'dregs' only has Nominative and Dative Singular and Ablative Plural, *vi:rus* 'slime' only Nominative, Genitive, Ablative Singular, *pondo:* 'in weight' only an Ablative Singular). Defective words of this kind seem another peculiarity of inflection in the style of Latin nouns.

2. Visions of system

Individually the dozen or so differences we have seen between Turkish and Latin noun inflection may be trivial, curious, noteworthy, or only footnote-worthy, depending on one's inclinations and interests. But are they significant?

Consider the imaginary paradigm in Table 4, already providing morphological analysis. The inflection of *elman* 'hand' resembles that of Turkish *el* in several respects: the citation form is without overt exponent; the exponent for Dative Plural is morphologically not strongly bound to the noun stem; there are separatist exponents for Accusative, Genitive, and Ablative, and, with these three Cases, also for Plural, and these inflected forms are therefore longer than others, especially the corresponding Singulars. But it is also reminiscent of the inflection of Latin *manus*: the paradigm of *elman* has about the same number of members; it is based on two stems, *elman* and *elmaner*; morphological cohesion is strong, except in the Dative Plural; the exponents of Case and Number appear to be cumulative for Nominative (unless *-i* is analysed as an allomorph of Plural *-ler*, with Nominative being *-Ø* as in the Singular), Dative, and Locative; two exponents are non-distinct for no

Table 4. Inflection of *elman* (hypothetical)

	Sg	Pl
Nom	*elman-∅*	*elman-i*
Acc	*elmaner-um*	*elman-ler-um*
Dat	*elman-u*	*elman-ibus*[a]
Gen	*elman-u:s*	*elmaner-ler-u:s*
Loc	— — —	*elman-ui:*
Abl	*elman-u*	*elman-ler-u*

Note: [a] *elman et ped-ibus*
hand(DatPl) and foot-DatPl
elman parv-i:s
hand(DatPl) small-DatPl

obvious extra-morphological reasons, viz. Dative and Ablative Singular; and unlike *manus* but like other nouns in Latin, *elman* is defective, lacking a Locative Singular. The inflection of *elman*, thus, represents a mixture of what might be called *el* properties and *manus* properties; and hypothetical though our example is, it demonstrates the logical possibility of such mongrel paradigms. In fact it is possible for individual inflected forms to partake of both property sets: *elman-ibus* in Table 4 has an exponent which cumulates Dative and Plural (a *manus* property) but is not morphologically bound to the stem (an *el* property); *elmaner-ler-u:s* has an extended stem as base (a *manus* property) but Plural and Genitive are expressed separately (an *el* property). Further, if the inflection of a particular word in a language has exclusively either *el* or *manus* properties, there is no logical necessity for other words of the same word-class to be of the same type. And if an entire word-class happens to be uniform in its preference for either *el* or *manus* properties, there is no a priori reason why other word-classes in the same language, inflecting for different categories, should have to follow suit.

The *el* and *manus* properties would acquire significance if they turned out to set an empirical limit on the theoretically possible diversity of inflectional systems. The strongest conceivable constraint that could thus be formulated would demand that either *el* properties or *manus* properties, but no mixture of both, be chosen (a) for each individual inflected word form, (b) for all inflectional forms of individual words, (c) for the inflection of all words within a particular word-class, and (d) for all classes of inflectable words of a language, no matter how different the categories for which they inflect. This amounts to the claim that all *el* properties mutually imply one another and are mutually exclusive with *manus* properties, and vice versa. It would

follow from this claim, if valid, that the properties characterising the inflection of Turkish *el* on the one hand and of Latin *manus* on the other are principled rather than accidental collections, notwithstanding their logical independence from one another. This is a fairly strong universal hypothesis, and it would presumably not lose its appeal entirely if its validity turned out to be probabilistic rather than absolute.

It is not a novel hypothesis, of course. It is sometimes believed that this essentially is what Morphological Typology, as flourishing in the nineteenth and early twentieth century, was all about. This is perhaps not entirely accurate. In spite of the preoccupation with language classification elaborating on bipartitions such as analytic-synthetic or tri- or quadripartitions such as isolating-agglutinative-flective(-polysynthetic),[8] the typology of inflectional *systems* was, so far as I can see, no matter of prime importance in the golden age of 'classical' Morphological Typology. Nonetheless, in the short textbook of Kuznecov (1956) that begins with a historical survey (covering the brothers Schlegel, Humboldt, Schleicher, Steinthal/Misteli, Fortunatov, Finck, and Sapir), several of what we have referred to as *el* and *manus* properties are mentioned as almost self-evidently interrelated differences between agglutination and flexion. But credit seems due in particular to Vladimír Skalička (see Skalička 1979 for a sample of his writings between 1935 and 1966), who did much to highlight such property bundles as constituents of his 'typological constructs', which also subsumed various non-morphological features. Skalička's favourite correlation was that between cumulative or separatist exponence and the presence or absence of inflectional synonymy (i. e. inflection classes) and inflectional homonymy; but others of the properties discussed above played a part too in his version of the isolating-agglutinative-flective-introflective-polysynthetic typology, or were added by more recent writers inspired by Skalička (such as Dressler 1985). All such correlations, however, are supposed, by Skalička and his followers, to be mere ideals which real languages, agglutinative or flective etc. only to certain degrees, will not always attain.

The prevailing view in the Skalička tradition appears to be that the allegedly interdependent typological properties mutually imply each other, with none of them being recognisably more basic than any other. This was not quite how Adam Smith and an anonymous Edinburgh contemporary had seen it, in momentous, but often unacknowledged or not fully appreciated, early contributions to language typology (or 'geniology').[9]

In his *Considerations Concerning the First Formation of Languages, and the Different Genius of Original and Compounded Languages* of 1761 (more accessibly republished in 1767), Adam Smith, the moral philosopher and political

economist, championed an excrescence, rather than coalescence, theory of the origin of inflections, suggesting that originally meaningless terminal parts of primary words (nouns, verbs, later also adjectives) are increasingly utilised, by the early formers of languages, to distinguish accessory categories such as Gender, Number, and Case, or Tense, Mood, Voice, and Person and Number. Growing out of originally invariable words, these terminations that become subject to variation will be "thoroughly mixed and blended" with stems. (Recall our *manus* properties of non-straightforward segmentability and strong cohesion.) Owing to randomly different shapes of the original simple words, the terminations newly semanticised will initially differ from one word to the other, and even the "love of analogy", responsible for the subsequent levelling out of some of these differences by way of transferring sets of inflections from one word to others, will not accomplish uniformity (i. e. there will be inflection classes). When more than one accessory category needs to be expressed with a single word, only its internally unsegmented termination will be available to carry the multiple burden; therefore, if there are as few as three Genders (the maximum Smith had encountered), ten Cases (as supposedly in Old Armenian), and three Numbers (as in Greek, Gothic, and Hebrew), a noun or adjective would need as many as ninety variants to distinguish them all cumulatively by contrasts in its terminations. The unpredictable diversity of the shapes of these inflections of different words further multiples the amount of forms that need to be memorised at this stage of language formation. The anonymous author of the article *Language* in the first edition of the *Encyclopædia Britannica* (1771), familiar with Smith's scenario, saw a way of limiting this profusion: speakers of such languages, in order not to overburden their memories, might opt for sacrificing accuracy by making individual inflected forms "serve a double, treble, or even quadruple office", as they did in Latin, where for example *puellae* takes the office (in fact the quintuple one) of Genitive, Dative, and Ablative Singular and Nominative and Vocative Plural. When 'original' languages of this kind, evidently modelled on Ancient Greek and Latin, are transformed into 'compounded' ones in the course of mixtures of peoples, inflections, too difficult to be learned by adults not used to them, will be abolished and be replaced by function words such as prepositions or auxiliaries. And these new expressions for accessory categories, familiar from the modern idioms of Europe, are not intimately joined to noun or verb stems, are uniform for all nouns and verbs, do not cumulate categories, and — as Anonymous added — are not homonymous in the manner of inflections. Had Smith and Anonymous been acquainted with Turkish, they would no doubt have noticed that inflectional suffixes there share the last three properties of function words

while still cohering with stems, if less tightly than those of Ancient Greek and Latin.

The four properties of systems of expression for accessory categories that are recognised as interdependent in this theory are not all directly correlated with all others. Morphologically conditioned allomorphy of inflections, resulting in inflection classes, is claimed to be contingent on a tight cohesion of stems and inflections — which follows from Smith's evolutionary assumptions. Stated as a one-way implication — if inflection classes then tight cohesion of stems and exponents —, the only co-occurrence ruled out would be that of inflection classes and non-cohesive exponents, while that of uniform inflection and cohesive exponents would be allowed.[10] Secondly, cumulative exponence is likewise assumed to be conditional on "thoroughly mixed and blended" combinations of stems and inflections, and perhaps vice versa. This point is not explicitly argued for by Smith; but what he may have had in mind as the reason for the mutual implication between these two properties was that they both evidence an aversion to clear-cut segmentation. Lastly, the practical utility of inflectional homonymy is conditional on cumulative exponence and inflection classes, which jointly create the danger of the fund of inflectional forms growing unmanageably large in the first place, without which there would be no need to economise by using single forms in more than one function.

It is fitting that the man poised to elucidate the principles determining the abundance or scantiness of the necessaries and conveniences of life clearly recognised, or pointed the way to the recognition of, abundance and scantiness of formal resources as complementary properties of inflectional systems — united by "moral certainty" rather than "physical necessity", as the author of *Language* in the *Encyclopædia Britannica* aptly put it. The way these matters are seen today, excepting perhaps the growth of inflections, is still essentially Smithian.

The 'Insensitivity Claim' of Carstairs (1981: 4—16), for instance, distinguishes two classes of phonologically bound forms, depending on their association with single parts of speech or with syntactic constituents (where the bound form may be hosted by various parts of speech), and prohibits members of the second class from varying in shape in accordance with morphological features of the words to which they happen to be bound.[11] The exponents of Number, Case, and possessor Person and Number in Turkish, not uniquely bound to nouns, would thus be prevented from displaying inflection-class variety, whereas Case and Number exponents in Latin are entitled to allomorphy conditioned by Gender or any arbitrary morphological features of nouns, which alone may host them. As pointed

out by Pike (1965: 205 f.), cumulative exponents are efficient in terms of compactness of signal (since one, often short formative carries two or more meanings) but are hard to learn and remember, simply because there are so many of them if paradigms are to be large and their members are to be kept distinct; while doing worse in compactness, separatist exponents are more efficient in that not so many of them are needed to staff even large paradigms. There should, thus, be a preference for cumulative exponents to be used in small paradigms (like those of pronouns) and for separatist exponents to be used in large ones. (Recall the different paradigm sizes in Tables 1 and 2.) Another consequence, as I have argued elsewhere (Plank 1986), is that the use of cumulative exponents limits the size of such paradigms as are cross-linguistically variable (e. g. those involving Case) more severely than that of separatist exponents. Surveying the incidence of inflectional homonymies (of a particular kind), Carstairs (1984a; 1987: 87—146) has noted that it is higher in cumulative than in separatist paradigms, and his explanation is that homonymy is more useful with cumulative exponents, where it conveniently reduces their number. Formal economy is a built-in advantage of separatist exponence, rendering such secondary measures of economy as the non-distinction of the members of a paradigm superfluous. And there in fact is another, more convenient method of economising available to systems which do not cumulate categories (and which would be problematic for systems which do), viz. to employ distinctive markers for individual categories not obligatorily but only where they are not contextually redundant. Examples of such economy of use (as opposed to systemic economy; cf. Plank 1987) are the non-use of Plural when a noun is accompanied by a numeral, or the non-use of Accusative when a direct object, on account of its indefiniteness or for other reasons, is unlikely to be mistaken for a subject[12] — phenomena alluded to above in pointing out differences in the use of identically named members of the paradigms of *el* and *manus*, which are, thus, less arbitrary than might have seemed.

3. Some things that it would be good to know more about

The division of labour, so dear to Adam Smith, is a tried principle in economics, so why not let it guide us when carrying on the enterprise of Smith & Co in the field of inflection? One branch of it that needs to be boosted is to do with the empirical testing and refinement of generalisations about the clustering of properties like those surveyed above. By now, instances

of the intermingling of what we have called *el* and *manus* properties in single paradigms, in the various paradigms for single parts of speech, and in the paradigms for different parts of speech within a language are too well known for anyone to insist on their incompatibility being perforce absolute. What one would want to know more about is whether some *el* and *manus* properties are more likely to be intermingled than others, and whether some members of individual paradigms (e. g. citation forms), some paradigms of those coexisting for a single part of speech (e. g. those of words with the highest frequency of occurrence), and some parts of speech (e. g. verbs) are more prone than others to such intermixtures – and if so, why. Over the centuries the typological notions of agglutination and flexion have acquired quite a reputation, though not an impeccable one; yet praise as well as damnation may have been premature, based on insufficient knowledge about permissible cross-linguistic variation between the opposite extremes of paradigms like those of Turkish *el* and Latin *manus*.

Another direction where much headway is yet to be made is the search for regular patterns in the manifestation of individual properties from either of the two typological sets. Especially interesting here are the two deviations from one-to-one mapping between inflectional meanings and forms which are conditional on cumulative exponence (itself a syntagmatic deviation from biuniqueness), viz. synonymy and homonymy. Unlike Turkish noun inflection, that of Latin does, uneconomically, involve synonymous exponents the choice between which depends on morphological classifications of nouns. More frequently than Turkish noun inflection, that of Latin does, economically, involve exponents which cut across paradigmatic distinctions. Turkish and Latin noun inflection can, thus, be assigned to opposite classes defined by these two criteria (more opposite on the first criterion than on the second). But what one might want to know further is whether synonymies and homonymies as observed especially in Latin are in any way predictably patterned. Can inflection classes be arbitrarily few or many? How uniform or diverse may they be? May arbitrarily few or many paradigmatic distinctions fall victim to homonymy? Are all paradigmatic distinctions equally susceptible to homonymy? Can all cases of non-distinctness of forms for distinct meanings be treated on a par, and are they all equally random?

The contributors to the present volume are employed in labouring at this second batch of questions. They examine how paradigmatic distinctions, as opposed to mere meaning distinctions, are established, and how and why they may occasionally be masked; how the abundance and complementary scantiness of forms furnishing paradigms is patterned; and what these patterns imply for the structure of paradigms and their grammatical and/or lexical

representation. The remainder of this introduction is devoted to tracing some of the footsteps in which those are likely to follow who are in pursuit of paradigmatic patterns.

4. Perceptions of patterns

Phenomena such as those dealt with in this volume have traditionally been seen primarily as constituting practical problems in the description of particular languages. Questions which used to make life difficult for the grammarian of Latin, for instance, typically included these: Assuming that Cases are to do with the encoding of syntactic and semantic relations, without, unfortunately, corresponding to these biuniquely, how many Cases should there be recognised? Should the same Cases be recognised in the Singular and in the Plural, in spite of some of them (Nominative and Vocative, and Dative and Ablative) always looking alike in the Plural? Should the same Cases be recognised with all words inflecting for Case, in spite of great differences among many of these words as to the formal distinctions they actually displayed? Into how many inflection classes should nouns (and adjectives) be divided, considering that the different inflectional repertoires rarely differed completely but overlapped more or less extensively? Should Gender be seen as being subordinate to Declension, considering that there were inflectional patterns (such as the non-distinctness of Nominative and Accusative) characterising all Genders regardless of Declension? Sometimes recourse could be had to purportedly general principles (such as that demanding such paradigmatic Case distinctions as would render syntactic rules of Case assignment most simple); sometimes the ordinary working grammarian's descriptive solution would be ad hoc and arbitrary; usually the preferred solutions would be in line with tradition. It was rarely appreciated that what complicated the description of a particular language might be amenable to cross-linguistic generalisations.

Formal non-distinctness was early perceived not to be a unitary phenomenon. Given the existence of a paradigmatic opposition, it could fail to be reflected by a contrast of form in what seemed to be a more accidental or a more systematic manner; and the more systematic a non-distinction, the greater seemed its impact on the structure of the language to be described,[13] as well as on its historical development. Many contributions to this volume attempt to refine this differentiation, once a favourite subject for terminology-mongers. When generalisations were suggested about possible and impossible,

likely and not so likely, non-distinctions in paradigms, these were commonly assumed to apply to the more systematic, genuinely morphological instances only.

Perhaps the most familiar of these is that similarity of meaning is conducive to systematic non-distinction. Bazell (1960) adds that semantic similarity must be accompanied by formal similarity in order to be able to provoke syncretism (his perspective is diachronic)[14] — which somewhat blurs the distinction between the accidental and the systematic, between non-distinctions which are mere by-products of phonology and such as morphology alone is accountable for. The problem with the thesis that non-distinction is encouraged by semantic affinity, supported as well as questioned in this volume, is its great adaptability. Expressing terms of the same categories, all members of a paradigm are of course similar in meaning, but to determine which are more and which less similar is notoriously controversial. Often there are equally natural alternatives of grouping terms (e. g. Cases may be divided into syntactic and adverbial ones as well as into independent and oblique ones, Persons into those referring to the speaker and to others as well as into those referring to speech-act participants and to non-participants), and sometimes groupings that seem natural to one analyst may strain the credulity of others (of which the Jakobsonian Case 'correlations', often referred to in this volume, are the most striking example). If meaning similarity can, thus, be defined almost at will, this constraint risks becoming vacuous, no matter how numerous the particular instances where its appeal is undeniable.[15] Even more worryingly, instances can also be found where one is lured to a diametrically opposite position, holding that non-distinction is favoured by dissimilarity rather than similarity of meaning. German verb inflection is a case in point (see Table 5), since here 1st and 3rd Person, no natural class on any plausible criterion, coincide in the Singular of all Moods and Tenses except Indicative Present, and with preterite-presents in this subparadigm too, and generally in all Plurals, with *-e* or *-Ø* (Sg) and *-en* (Pl) serving as non-distinct exponents. The odds presumably are that this is not the most typical pattern of reducing inflectional resources. But who can really tell, with reliable cross-linguistic information still lacking for most paradigmatic categories?

As will have been noticed, individual subparadigms in our examples (Tables 1—5) were set out as lists, with no internal structure other than linear order, and formal non-distinctions usually involved neighbours. Where non-neighbours coincided — e. g. 3sgPoss and 3plPoss of all Cases in the Plural in Table 1, Gen and Voc/Nom in the Singular of *ignis* in Table 3, or Abl and Dat in the Singular of the hypothetical noun in Table 4 — the subparadigms concerned could easily have been rearranged accordingly. There is, however,

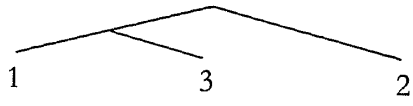
Table 5. German verb inflection

		Pres		Past		
		Ind	Sub	Ind	Sub	
Sg	1	*geb-e*	*geb-e*	*gab-Ø*	*gäb-e*	'give' (strong)
	3	*gib-t*	*geb-e*	*gab-Ø*	*gäb-e*	
	2	*gib-st*	*geb-est*	*gab-st*	*gäb-est*	
Pl	1	*geb-en*	*geb-en*	*gab-en*	*gäb-en*	
	3	*geb-en*	*geb-en*	*gab-en*	*gäb-en*	
	2	*geb-t*	*geb-et*	*gab-t*	*gäb-et*	
Sg	1	*lern-e*	*lern-e*	*lern-t-e*	*lern-t-e*	'learn' (weak)
	3	*lern-t*	*lern-e*	*lern-t-e*	*lern-t-e*	
	2	*lern-st*	*lern-est*	*lern-t-est*	*lern-t-est*	
Pl	1	*lern-en*	*lern-en*	*lern-t-en*	*lern-t-en*	
	3	*lern-en*	*lern-en*	*lern-t-en*	*lern-t-en*	
	2	*lern-t*	*lern-et*	*lern-t-et*	*lern-t-et*	
Sg	1	*kann-Ø*	*könn-e*	*konn-t-e*	*könn-t-e*	'can' (pret-pres)
	3	*kann-Ø*	*könn-e*	*konn-t-e*	*könn-t-e*	
	2	*kann-st*	*könn-est*	*konn-t-est*	*könn-t-est*	
Pl	1	*könn-en*	*könn-en*	*konn-t-en*	*könn-t-en*	
	3	*könn-en*	*könn-en*	*konn-t-en*	*könn-t-en*	
	2	*könn-t*	*könn-et*	*konn-t-et*	*könn-t-et*	

an empirical question here, viz. whether the different subparadigms for one category can always be in the same linear order, as determined on the evidence of non-distinctions. Recall that Latin Cases were presented in the order Voc-Nom-Acc-Abl-Dat-Gen in both Singular and Plural subparadigms; comparing these two subparadigms for each noun of Table 3, it will be seen that in each case the non-distinct forms turn out to be neighbours in the same lists. For *ignis* (Declension IIIb) the re-ordered list would have to be Voc-Nom-Gen-Acc-Abl-Dat, but this too would account for non-distinctions in the Singular (Voc = Nom = Gen, Abl = Dat) as well as in the Plural (Voc = Nom, Abl = Dat). If this were feasible in general, these uniform linear orderings across subparadigms would seem to capture a significant aspect of paradigm structure — and, to the extent that non-distinctions are constrained by semantic similarity, of the structure of meanings expressed in paradigms as well.

On the other hand, patterns of non-distinctions are conceivable which would require representational structures more complex than lists. If, for instance, a Case paradigm consistently had non-distinctions only within the syntactic and/or within the adverbial subsets of Cases, a tree structure (or an analogue, likewise involving higher-level classificatory features) would be more appropriate for its representation.[16] The lists, i. e. parts of columns, in

Table 5 suggest that 3rd Person could coincide with 2nd (its downstairs neighbour) as well as with 1st; but 1st = 2nd Person in unattested. This pattern too would be more adequately modelled in a tree where 3rd Person is linked more closely with 1st than with 2nd:



geb-e	≠	*gib-t*	≠	*gib-st*	
gab-Ø	=	*gab-Ø*	≠	*gab-st*	etc.

What this tree also implies is that 2nd Person might coincide with 3rd and 1st if these two coincide with each other. Another not entirely satisfactory feature of this tree is its incompatibility with the pattern of stem allomorphy which in the Singular Present Indicative unites 3rd Person with 2nd (*gib-*) in contradistinction to 1st (*geb-*). Wherever more than one segment of an inflected form participates in the signalling of paradigmatic distinctions (such as, in the present example, an ending, sometimes preceded by a Past Tense suffix, and the verb stem itself), non-distinctions may, in some such manner, be distributed differently with different segments, necessitating more elaborate representations, such as the superimposition of one tree on another. But again, if non-distinctions in general are induced by similarities of meaning, one would still expect to find semantic correlates to any different groupings of different segments of paradigm members.

Another general hypothesis, appearing in various guises, is that non-distinction, at least of the more systematic kind, is the less likely the more important an opposition. One way of gauging importance is in terms of redundancy: a distinction is important if it is not contextually recoverable. Thus, it could be argued that keeping the Genitive distinct from Cases marking head nouns is, *ceteris paribus*, more important than distinguishing subject and object Cases such as Nominative and Accusative, because attributive nouns could otherwise be mistaken for heads whereas the inherent semantics of nouns and verbs renders the confusion of subjects and objects not very likely even if not distinctively encoded (cf. Plank 1980). The Latin nouns of Table 3 would seem to confirm this prediction, showing eleven instances of Nominative coinciding with Accusative (mostly, however, in Neuters) but only three of a non-distinct Genitive. Of all three Persons of German verbs it is the 3rd where Number distinction is most important in a similar sense: finite verbs are obligatorily accompanied by subject noun phrases which themselves usually distinguish Number, except when consisting

Table 6. Plural inflection of definite article and nouns in German (partial)

	Nom		Acc		Gen	
Sg	*d-er*	*Leiter-Ø*	*d-en*	*Leiter-Ø*	*d-es*	*Leiter-s*
Pl	*d-ie*	*Leiter-Ø*	*d-ie*	*Leiter-Ø*	*d-er*	*Leiter-Ø*
		'the leader' (Masc)				
Sg	*d-as*	*Messer-Ø*	*d-as*	*Messer-Ø*	*d-es*	*Messer-s*
Pl	*d-ie*	*Messer-Ø*	*d-ie*	*Messer-Ø*	*d-er*	*Messer-Ø*
		'the knife' (Neut)				
Sg	*d-ie*	*Leiter-Ø*	*d-ie*	*Leiter-Ø*	*d-er*	*Leiter-Ø*
Pl	*d-ie*	*Leiter-n*	*d-ie*	*Leiter-n*	*d-er*	*Leiter-n*
		'the ladder' (Fem)				

of the 3rd Person pronoun *sie*, which may be Singular Feminine or Plural. But no Person actually does fail to distinguish Numbers.[17] (*Lern-t* may be Singular or Plural, but not of the same Person.) More in line with the present hypothesis, the inflections of words which tend to co-occur syntagmatically sometimes do complement each other in their economising. For instance, Masculines and Neuters of some noun classes in German lack a distinctive Plural suffix *-n* in the Nominative, Accusative, and Genitive which corresponding Feminines have;[18] definite articles, by contrast, distinguish Singular and Plural of these Cases in the Masculine and Neuter subparadigms but not in the Feminine (cf. Table 6). All in all, however, such neatly complementary patterns seem rather sporadic, as are non-distinctions where unimportance is defined in terms of limited communicative utility. To mention only the best-known example of this kind: Why should inanimate nouns and pronouns, which are not very likely to be used as transitive subjects, have a distinct Case form specialised for this function? Hence the non-distinction of Nominative and Accusative with Indo-European Neuters, the original class of inanimates. All these importance-based patterns could be interpreted as analogues of the optional rather than obligatory expression of paradigmatic contrasts so familiar from languages where *el* rather than *manus* properties are prevalent (cf. Plank 1987).

Markedness is another notion which has traditionally been brought to bear on the question at issue here:[19] non-distinction is likelier to occur in marked than in unmarked contexts. Thus, on the assumption that Plural is

marked vis-à-vis Singular, Plural subparadigms should exhibit more non-distinctions than corresponding Singular ones. They indeed do so in our examples. There are, in Turkish, more non-distinctions of Person and Number of possessor in the bottom Plural section of Table 1 than in the top Singular section; and Plural possessor forms once, with 3rd Person, fail to distinguish Number of nouns, which Singular possessor forms do never. In Latin (Table 3), nouns fail to distinguish Cases more frequently in the Plural than in the Singular; none has more distinct forms in Plural subparadigms than in Singular ones. Likewise German verbs (Table 5) may have three distinct Person forms in the Singular, but have only two in the Plural. On the assumption that Nominative is unmarked vis-à-vis all other Cases, its subparadigms should be the most distinctive ones. Accordingly, in Turkish (Table 1) 2nd and 3rd Person Singular possessor forms are only distinguished in the Nominative but in no other Case. Contrary to this prediction, however, it is precisely in the Nominative (and Vocative) where Latin nouns (Table 3) ever fail to distinguish Number: see the paradigm of *die:s*.[20] On the assumption that Subjunctive is marked vis-à-vis Indicative, it does not come unexpected that German verbs (Table 5) in this Mood never distinguish all three Persons, as happens in the Indicative (Singular Present) of strong and weak verbs. The same pattern recurs when Present, unmarked, is compared to Past, the marked Tense. On such evidence, even if not entirely unequivocal, markedness valuations are something not to be neglected in structuring paradigms. One wonders whether traditional paradigm designers had an inkling of the significance of this notion when placing certain terms — the unmarked ones — in the first or other peripheral positions of their lists or matrices.

There may be a sense in which distinction can be said to be more important in unmarked than in marked contexts.[21] When non-distinctions were claimed to distribute unevenly over the several *categories* a word may inflect for, importance certainly was a chief consideration. (The uneven distributions discussed so far were over the several *terms* realising one category.) A commonly encountered hypothesis along these lines is that if nouns and other nominal words inflect for both Case and Number, Case, a surface syntactic category, is less important than Number, a referential semantic category, hence will more readily admit non-distinctions.[22] Latin nouns (Table 3) behave as predicted: there are all kinds of non-distinctions of Cases, but only in Declension V (*die:s*) do Singular and Plural coincidence for two Cases. In the list (i. e. column) arrangements in Table 3, non-distinct forms thus are usually within either the Singular or the Plural subsection (where they are almost always neighbours); and in the matrix arrangement of Table 2 identities are vertical (and once diagonal: *manu:s* SgGen = PlVoc/Nom/Acc) but never

Table 7. Inflection of Latin *manus*

Voc	Sg	*manus*
	Pl	*manu:s*
Nom	Sg	*manus*
	Pl	*manu:s*
Acc	Sg	*manum*
	Pl	*manu:s*
Abl	Sg	*manu:*
	Pl	*manibus*
Dat	Sg	*manui:*
	Pl	*manibus*
Gen	Sg	*manu:s*
	Pl	*manuum*

horizontal. If the paradigm of *manus* is rearranged as in Table 7, where forms are first grouped by Case and only subsequently by Number (it was done the other way round in the lists of Table 3), non-distinct forms are scattered among the different Case subparadigms, rather than being corralled in single subparadigms. Graphic representations as in Tables 3 and 7 differ in facilitating the recognition of non-distinctions (of Case) and distinctions (of Number) respectively. Traditionally those like Table 3 have been preferred over those like Table 7, presumably because they were felt to reflect more adequately which category is dominant over the other, and which should therefore provide the first criterion for grouping.[23] Two-dimensional representations as in Table 2 are neutral in this respect, lending themselves to vertical as well as horizontal grouping – though apparently more easily to the former (cf. Pike 1963), hence the inclination to interpret columnal categories (in Table 2 Number) as dominant.

Determining the relative importance of categories competing for paradigmatic dominance is of course not unproblematic. One promising measure might be Sapir's (1921: ch. 5) conceptual typology, distinguishing, from most to least 'important', basic, derivational, concrete relational, and pure relational concepts, which has recently been reformulated by Bybee (1985) in terms of semantic 'relevance'. Greater basicness or relevance of a category tends to be reflected by the greater proximity of its exponents to stems, if the categories concerned are not expressed cumulatively. Owing to its concrete relational or even derivational nature, Number should thus be expressed more closely to noun stems than Case, a pure relational concept – as it actually is in Turkish and with some regularity also elsewhere (cf. Universal No. 39 of Greenberg 1963). With cumulative exponence one analogue to positional

closeness to stems would be greater resistance to non-distinction, representable in terms of paradigmatic dominance, which one would then expect to be cross-linguistically quite uniform. As usual, however, reality falls somewhat short of expectations. Many languages indeed follow the Latin noun pattern and economise on Case rather than Number distinctions. But languages are on record which do the reverse, among them Finnish (not as consistently agglutinative as Turkish), where all fourteen or so Cases are distinct from one another in both Singular and Plural, while in two Cases, Comitative and Instructive, the two Numbers are not. While it would be rash to renounce all pretensions to predictability, such cross-linguistic diversity suggests that at least some categories will have to be ranked on a language-particular basis, if dominance is to correspond to less extensive non-distinction, as is acknowledged by Hjelmslev (1935: 107 f.) and Carstairs (1987: 118—124). With some categories dominance relations seem reasonably uniform, even though conceptually they hardly admit of any ranking. Thus, Person and Number in verb inflection are both purely relational and not very 'relevant', hence should be equally susceptible to non-distinction; but in German and elsewhere Person distinctions are sacrificed more readily than those of Number. In independent pronouns, on the other hand, where the 'relevance' of both categories increases since their function here is less ancillary than in agreement or cross-reference, non-distinctions of Person are less frequent than such of Number.

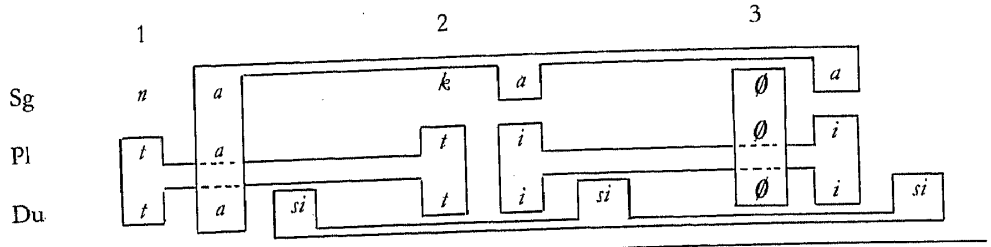
The requirement that paradigmatic categories must be ranked, no matter how unpredictably, can still be interpreted as constraining non-distinctions. It effectively implies that a choice must be made between categories in cutting down on distinctions: no two categories must be simultaneously affected, at least not to the same extent. With nouns of Declension V in Latin both Number and Case are affected, but Number less heavily so than Case (in only two out of six instances, as compared to six out of ten instances for Case). In German verb inflection (Table 5) Number is affected less than Person, and Tense less than Mood, neither Number nor Tense being affected at all. Whether Person or Mood is the primary victim, however, is difficult to tell especially with weak verbs, where Indicative and Subjunctive are not distinct in nine instances out of twelve where they could have been distinguished, and 1st and 3rd Person are not distinct in seven instances out of eight; but the consistent distinction of 3rd and 2nd presumably gives Person the edge over Mood, and makes this paradigm conform to the hypothesis of categorially selective non-distinction. At first sight this hypothesis does not bear on a paradigm like that of object prefixes on verbs in Fore (a Papuan language of the Eastern Highlands of New Guinea), since all three Persons and three Numbers are fully distinguished, as shown in Table 8a. It is only when these

Table 8. Object prefixes in Fore

a. internally unanalysed

Person / Number	1	2	3
Sg	*na-*	*ka-*	*a-*
Pl	*ta-*	*ti-*	*i-*
Du	*tasi-*	*tisi-*	*isi-*

b. internally analysed



prefixes are internally analysed into what Pike (1963) calls 'matrix formatives' that partial identities are recognisable (see Table 8b), and some of these are not categorially selective. The formative *-si*, a straightforward morpheme for Dual, is the same for all Persons, and *Ø-*, the zero exponent for 3rd Person, is the same for all Numbers; but the formatives *-a*, *-i*, and *t-* fail to distinguish Persons as extensively as Numbers. It remains to be seen whether undiscriminating non-distinction only occurs in such circumstances where syntagmatically combined segments, and not even proper morphemes at that, co-express inflectional categories.

The patterns of inflectional abundance have attracted far less generalisation-seeking attention than those of scantiness. Perhaps the most popular subject under this heading has been suppletion: this blatant disregard for economy by providing two or more entirely dissimilar stems per word to be inflected is supposedly something only particularly frequent words (e. g. general verbs meaning 'to be', 'to have', or 'to do', or common evaluational, quantificational, or dimensional adjectives such as 'good/bad', 'many/few', 'large/small') will be able to afford. Further, suppletion as well as less radical allomorphic stem alternations, as seen above in Latin noun inflection (Table 3) and German verb inflection (Table 5), have been supposed to be preferably conditioned by those inflectional categories which are paradigmatically dominant, i. e. are closest to the stem and/or relatively immune to non-distinction. (Note, however, that stem allomorphy of non-weak verbs in German is

conditioned by Person (*geb-/gib-*) and Mood (*gab-/gäb-*, *kann-/könn-*, *konn-t-/könn-t-*), two non-dominant categories.) As to inflection classes, brought about by exponential allomorphy conditioned by stems, the constant disagreements about how many of them to distinguish in particular languages seem to have long discouraged comparatists from looking for general principles that might curb this confusing profusion. At least the question of how many inflection classes there can possibly be in a single language could perhaps be answered derivatively: about as many as there may be semantic classes, out of which inflection classes are assumed to develop in a process of grammaticisation (cf. recently Wurzel 1986). But for answers to questions such as this one might be inclined to turn to the Guinness Book of Records rather than to the theory of inflection.

Some elementary arithmetic might also be useful here, though, given a little information about the inflectional resources of a language. Imagine a language, Residual Latin, where nouns inflect for three Cases and two Numbers and there are these exponents for Case-Number combinations, with allomorphs conditioned idiosyncratically by noun stems:

Sg Nom: *-a*, *-us*
Acc: *-am*, *-um*, *-em*
Gen: *-i*
Pl Nom: *-ae*
Acc: *-as*, *-os*
Gen: *-arum*, *orum*

How many separate inflectional repertoires could there possibly be, differing at least on one Case-Number combination? Multiplying the numbers of exponents for each category combination with one another gives the correct answer: twenty-four (2 × 3 × 1 × 1 × 2 × 2). All of them are listed in Table 9. Minimally there would only be three noun declensions in Residual Latin: this is the highest number of allomorphs for any single Case-Number combination (SgAcc). Having as many as twenty-four inflection classes for a single part of speech would be somewhat unusual for a real language; having as many as real Latin could have for its nouns would be ludicrous (assuming nine allomorphs for SgVoc, nine for SgNom, six for SgAcc, six for SgAbl, six for SgDat, five for SgGen, seven for PlVoc, seven for PlNom, eight for PlAcc, three for PlAbl, three for PlDat, six for PlGen, and ignoring the Locative, the sum total is 1,851,776,640) — hundreds of millions of them would lie idle for the lack of nouns![24] What the 'Paradigm Economy Principle' of Carstairs (1987: ch. 3) essentially predicts is that the actual number of inflection classes, far from ever approximating the theoretical maximum, will

Table 9. Possible inflection classes in Residual Latin

		I	II	III	IV	V	VI	VII	VIII
Sg	Nom	*-a*	*-a*	*-a*	*-a*	*-a*	*-a*	*-a*	*-a*
	Acc	*-am*	*-am*	*-am*	*-am*	*-um*	*-um*	*-um*	*-um*
	Gen	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*
Pl	Nom	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*
	Acc	*-as*	*-as*	*-os*	*-os*	*-as*	*-as*	*-os*	*-os*
	Gen	*-arum*	*-orum*	*-arum*	*-orum*	*-arum*	*-orum*	*-arum*	*-orum*
		IX	X	XI	XII	XIII	XIV	XV	XVI
Sg	Nom	*-a*	*-a*	*-a*	*-a*	*-us*	*-us*	*-us*	*-us*
	Acc	*-em*	*-em*	*-em*	*-em*	*-am*	*-am*	*-am*	*-am*
	Gen	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*
Pl	Nom	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*
	Acc	*-as*	*-as*	*-os*	*-os*	*-as*	*-as*	*-os*	*-os*
	Gen	*-arum*	*-orum*	*-arum*	*-orum*	*-arum*	*-orum*	*-arum*	*-orum*
		XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV
Sg	Nom	*-us*	*-us*	*-us*	*-us*	*-us*	*-us*	*-us*	*-us*
	Acc	*-um*	*-um*	*-um*	*-um*	*-em*	*-em*	*-em*	*-em*
	Gen	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*	*-i*
Pl	Nom	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*	*-ae*
	Acc	*-as*	*-as*	*-os*	*-os*	*-as*	*-as*	*-os*	*-os*
	Gen	*-arum*	*-orum*	*-arum*	*-orum*	*-arum*	*-orum*	*-arum*	*-orum*

in fact be the minimal one possible, i. e. will equal the number of allomorphs of the category combination most richly endowed with allomorphs. On the assumption that Vocative as well as Nominative Singular have nine allomorphs each in Latin (viz. *-a/-e/-um/-us/-u:/-e:s/-s/-Ø/-is* and *-a/-us/-um/-u:/-e:s/-s/-Ø/-is/-e*), there should, thus, be no more than nine declensions; but in Table 3 we distinguished eleven. This is hardly a serious transgression; moreover, it is sanctioned by a refinement of Carstairs's principle which permits two or more paradigms to be counted as one if the differences between them correlate consistently with lexically determined syntactic properties. Gender is such a property in Latin noun inflection, which for Nominative Singular, for example, partners *-us* and *-um*, *-s* and *-Ø*, and *-is* and *-e* as Masculine or Feminine and Neuter variants, bringing the total of allomorphs which count down to six, now the maximum reached by any Case-Number combination.[25] Nonetheless, even after Declensions II_M and II_N, $IV_{M/F}$ and IV_N, $IIIa_{M/F}$ and $IIIa_N$, and $IIIb_{M/F}$ and $IIIb_N$ are combined to single 'macro-

paradigms', the inflection classes in Table 3 still number seven, one more than permitted (and two more than traditionally recognised in grammars of Latin, given to glossing over the heterogeneity of the Third Declension). We may identify Declension IIIab (*urbs*), resembling Declension IIIa (*re:gs*) in the Singular and Declension IIIb (*ignis*) in the Plural, as the offender: such principled mixtures of paradigms are in fact licensed by a 'Slab Codicil' to Carstairs's Paradigm Economy Principle (1987: 81).

There are actually two questions here, which are beginning to shade into one another: How many inflection classes may coexist? How may the inflectional resources available be distributed among the several classes? Purely in terms of resources it would make no difference whether Latin had six, seven, eleven, or 1,851,776,640 declensions of nouns, the amount of Case-Number exponents that need to be memorised remaining the same. It is the manner in which the allomorphs for Case-Number combinations are assembled which may cause or save the learner a lot of trouble. Only if the allomorphs available for each Case-Number were assembled in all possible combinations could there be 1,851,776,640 declensions in Latin (or 24 in Residual Latin); and every inflectional set would then have to be memorised allomorph by allomorph. It would facilitate the task of the learner if the choice of an allomorph for one Case-Number would follow from the choice made for another Case-Number. Note that if there were such interdependencies, this would automatically reduce the diversity of inflection classes. Of course the ideal here would be for all Case-Number exponents mutually to imply all others; but this is only feasible if inflection is uniform or no two inflection classes share a single exponent. Paradigms involving cumulative exponence typically meet neither condition. The allomorphs available for different paradigm slots usually vary somewhat in number (from three to six or nine, depending on how one is counting, in Latin noun inflection, and from one to three in Residual Latin), and this precludes complete distinctness of classes. The empirical question, then, is whether the assemblage of inflectional sets from the available allomorphs can still be constrained in any principled manner.

One pertinent idea already alluded to, due to Carstairs (1987), is to look for constraints on the mixing of classes. Consider a version of Residual Latin further impoverished by the loss of Accusative Singular allomorph *-um* (which eliminates the possible Declensions V–VIII and XVII–XX). Assume it has three Declensions, of which one is I and the second XXIV. Which one might be the third? Carstairs's thesis is that if an inflection class has no exponents of its own, it can only collect them wholesale, as it were, from subparadigms (called 'slabs' by Carstairs) of classes which do have exponents of their own. Thus, in our case, a third, mixed class could borrow all Singular exponents

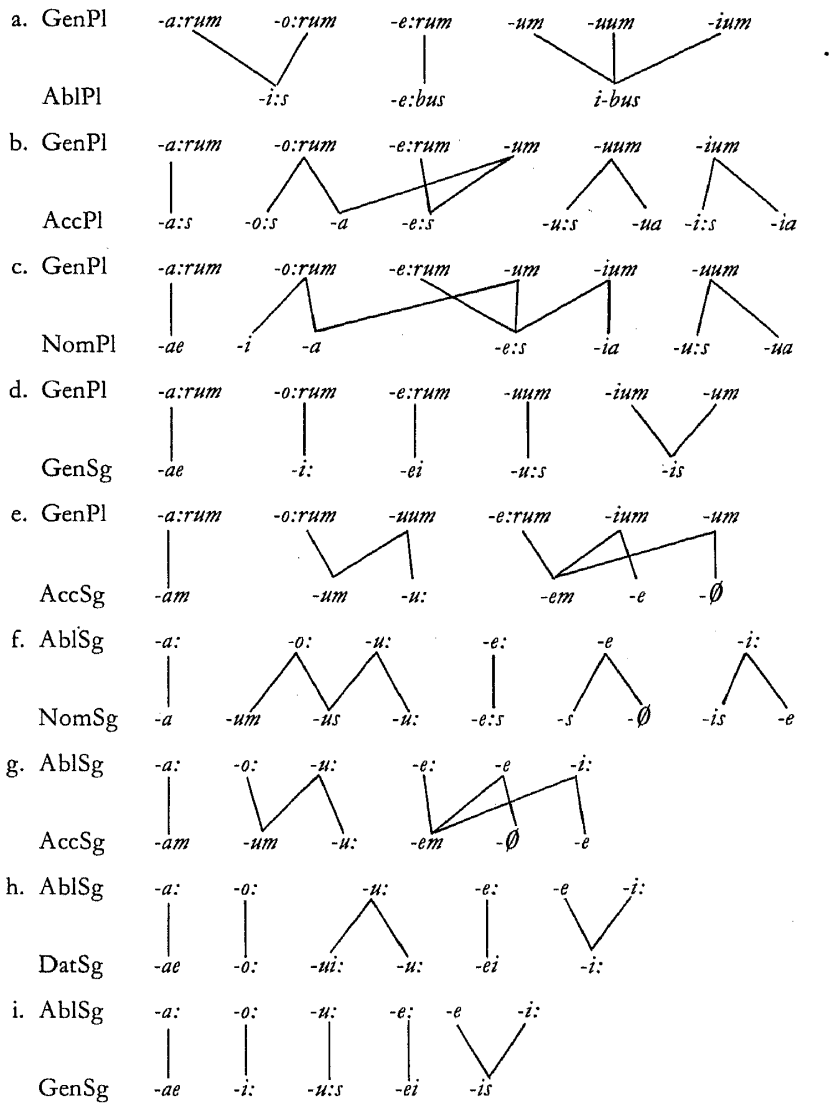
from Declension I and all Plural exponents from Declension XXIV (yielding Declension IV), or vice versa (yielding Declension XXI); or it could borrow all Nominative exponents from Declension I (Plural *-ae* being in fact common to I and XXIV, like SgGen *-i*) and all Accusative and Genitive exponents from Declension XXIV (yielding Declension XII), or vice versa (yielding Declension XIII); or all Accusative exponents from Declension I and all Nominative and Genitive exponents from Declension XXIV (yielding Declension XIV), or vice versa (yielding Declension XI); or all Genitive exponents from Declension I and all Nominative and Accusative exponents from Declension XXIV (yielding Declension XXIII), or vice versa (yielding Declension II). Illicit unprincipled mixtures would be Declension III, IX, X, XV, XVI, and XXII. With principled mixtures the choices of allomorphs for different slots are still linked by mutual implications within each subparadigm. For Impoverished Residual Latin with Declension I, XXIV, and IV, the following mutual implications would hold:

SgNom	*-a*	↔	SgAcc	*-am*
SgNom	*-us*	↔	SgAcc	*-em*
PlAcc	*-as*	↔	PlGen	*-arum*
PlAcc	*-os*	↔	PlGen	*-orum*

It would be unpredictable which Plural forms go with which Singular forms. Therefore, learning to inflect a noun would necessitate the learning of one Singular (either Nominative or Accusative) as well as of one Plural form (either Accusative or Genitive). This would still be something of an improvement on having to learn four. (Being uniform, SgGen *-i* and PlNom *-ae* would not have to be learned with particular nouns anyway.) Declension IIIab (*urbs*) in real Latin is assembled from the Singular and Plural of two other classes (IIIa and IIIb) in such a principled manner, following a distinction of that category, viz. Number rather than Case, which we have found on other grounds to be paradigmatically dominant.[26]

In a more general vein any implicational relationships between the choices of allomorphs for different paradigm slots effectively constrain the diversity of inflection classes. Table 10 presents some sample mappings between allomorph sets of Case-Numbers of Latin nouns (Table 3), where the existence of one-to-many relations show that the Case-Number concerned is not uniquely predictive. Case-Numbers which uniquely imply choices elsewhere are the Genitive Plural and Ablative Singular (cf. Risch 1977). Whenever there is a downward split from a Genitive Plural or an Ablative Singular allomorph in Table 10, the choice of the other Case-Number allomorph is determined by Gender. (E. g. GenPl *-o:rum* corresponds to AccPl *-o:s* with

Table 10. Correspondences between Case-Number allomorphs of Latin nouns



Masculines and *-a* with Neuters.) In a few upward splits Gender has the casting vote too (e. g. AblPl *-i:s* corresponds to Feminine GenPl *-a:rum* and Masculine/Neuter GenPl *-o:rum*), but mostly there is no way of predicting the corresponding allomorph. Thus, if a noun has Ablative Plural *-ibus*, it may have any one of three alternatives for Genitive Plural; if it has Genitive Plural *-um*, or *-uum*, or *-ium*, its Ablative Plural can only be *-ibus*. It is in this sense of no member of their own allomorph set corresponding to more than one member of the allomorph set of other Case-Numbers (unless these are

Gender variants) that the Genitive Plural may be said to imply the Ablative Plural etc., and the Ablative Singular the Nominative Singular etc. There are of course mutual implications between Vocative and Nominative Plural and between Ablative and Dative Plural, which always share the respective allomorph.[27]

Such implicational relationships between paradigm members are purely a matter of interdependencies in the choices of allomorphs, whose effect is to limit the diversity of inflection classes. But is all this entirely accidental and independent of any other structural considerations? Category dominance perhaps comes into play here once more. Implications accordingly ought to hold within, rather than across, subparadigms of the dominant categorial distinction — in our Latin example, within the Singular and the Plural Cases rather than within the Vocative, Nominative etc. Numbers. Frequency has often been argued (e. g. recently by Karlsson 1986 and Nyman 1987) to be a factor here, insofar as it would seem appropriate for such paradigm members as will be used most frequently to serve as 'characteristic' or 'diagnostic' or 'reference' forms from which other, less frequently employed forms may be predicted. Another, ostensibly trivial consideration is purely numerical: naturally, paradigm members with more allomorphs will imply those with fewer allomorphs, rather than the other way round. If Ablative Singular has six allomorphs and Genitive Singular only five (cf. Table 10i), the simplest mapping between the two sets has two of the former correspond to one of the latter, so that for any Ablative Singular allomorph there will only be one Genitive Singular partner. The question then is whether it is by chance that some paradigm members are more richly endowed with allomorphs than others, and are thus primarily responsible for how many inflection classes there are. According to markedness theory (as espoused by Greenberg 1966 and others), the answer is no: it is the unmarked categories which are supposed to show the greatest allomorphic variation. In the inflection of nouns in Latin one would thus expect declensional variety to be due to the Singular rather than the Plural and the Nominative rather than any other Case, since these are singled out as unmarked by standard criteria, including high frequency of occurrence. Allomorphs are indeed more numerous in the Singular than in the Plural, except for Genitive and, counting all Gender variants, Accusative; and they are more numerous in the Nominative (and Vocative) than in the other Cases, some of which, however, draw level with, or in the Plural even outdo, Nominative when Gender variants are discounted. Nonetheless, Nominative Singular is far less diagnostic than Genitive Plural and Ablative Singular in particular, which trail far behind on the markedness count.

Even for modestly sized paradigms and none too lavish allomorphic resources, it is essential for allomorph choices to be interdependent, or else inflection classes would proliferate astronomically. But just how tight the net of such interdependencies will have to be, and precisely how it will have to be organised, are questions where it is difficult to generalise in the present state of our knowledge. The Paradigm Economy Principle of Carstairs can be seen as a kind of limiting condition, requiring allomorph interdependencies to conspire so as to sanction no more than the minimal number of inflectional repertoires.

Also pertinent is a suggestion of Risch (1977) concerning possible differences among such repertoires. Comparing the Latin noun declensions, Risch notes that some are more similar than others, and that the similarities and dissimilarities are not random but patterned. The pattern can be defined by appropriately arranging the several declensions relative to one another in accordance with the overall similarities between them. If it is required, more specifically, that declensions be adjacent whenever they share a single trait, the extent to which individual variations are interdependent is reflected by the ordering: the less systematic the interdependencies, the further and the more numerous will be the deviations from linearity. The way the Latin noun declensions have traditionally been numbered in fact suggests a linear arrangement, beginning with Declension I and ending with V. Risch argues for a partial reversal of the customary order, placing Declension IV in between II and IIIb (vowel stems). Moreover, he finds linearity overly restrictive insofar as Declension V shares traits with both IIIa (consonant stems) and I, which can only be accounted for if Declension V, following IIIa, is also linked up with I, thus forming a circle. Ignoring the Nominative and Accusative of Neuters, following general rules of their own, Risch compares the declensions on these features:

(a) Nominative Plural in *-(V:)s* vs. *-V(:)*,
(b) Dative/Ablative Plural in *-i:s* vs. *-V(:)bus*,
(c) Genitive Plural in *-V:rum* vs. *-(V)um*,
(d) Genitive Singular in *-V(:)* vs. *-V(:)s*,
(e) Nominative and Accusative Singular in *-us* and *-um* vs. *-V/-V(:)s* and *-Vm* (where V is not *u*),
(f) Genitive and Dative Singular homonymous vs. distinct;

and it will be seen, if Table 3 is read as forming a circle (i. e. from I to IV and continuing from IIIb to V and back again to I), that the declensions sharing any of these traits will always be contiguous; e. g. Nominative Plural is in *-(V:)s* in Declensions IV—V and in *-V(:)* in Declensions I—II. As

Table 11. Strong verb inflection in German

		Ind		Sub	
		Pres	Past	Pres	Past
Sg	1	*geb-e*	*gab-Ø*	*geb-e*	*gäb-e*
	3	*gib-t*	*gab-Ø*	*geb-e*	*gäb-e*
	2	*gib-st*	*gab-st*	*geb-est*	*gäb-est*
Pl	1	*geb-en*	*gab-en*	*geb-en*	*gäb-en*
	3	*geb-en*	*gab-en*	*geb-en*	*gäb-en*
	2	*geb-t*	*gab-t*	*geb-et*	*gäb-et*

observed by Risch (and Carstairs 1984b), the distribution of two further traits does not fit in with this circle: (non-Neuter) Nominative and Accusative Plural are homonymous in Declensions IV and IIIa–V and distinct in I–II and IIIb–IIIab; and Dative and Ablative Singular are homonymous in II and IIIb and distinct in IV and IIIab–I. It is precisely here, however, that subsequent changes – AccPl *-e:s* extending to Declensions IIIb and IIIab, AblSg *-e* extending to Declension IIIb – have eliminated disorder. In the present context the moral of this case study is that allomorphic resources are – perhaps as a rule rather than only in Latin noun inflection – distributed among inflection classes in such a manner as to render the coexisting classes maximally similar and the differences between them maximally systematic, with the transitions between classes forming a single, linear or circular, continuum.

The inflectional repertoires just discussed were those of different words or classes of words. There are circumstances where one might also say that one and the same word has various inflectional repertoires in various sub-paradigms. German verbs (Table 5), for example, inflect partly differently for Person and Number in the Indicative and the Subjunctive Present and (applying only to strong verbs) in the Indicative and the Subjunctive Past. This raises the analogous question of whether the diversity of exponents in the different sets is patterned or random. If the Tense and Mood columns of Table 5 are rearranged as in Table 11, the transitions between the sets come closer to forming a single linear continuum: 3rd Singular *-e*'s are adjacent, so are 2nd Singular *-st*'s vs. *-est*'s and 2nd Plural *-t*'s vs. *-et*'s. Two 1st Singular *-e*'s are also adjacent, but unfortunately are separated from the third by a *-Ø* (for Past). If, however, the leftmost column, Indicative Present, is connected to that on the right, Subjunctive Past, forming a circle, all 1st Singular *-e*'s become neighbours. The disadvantage of this circular arrangement is that stems with the same Ablaut grade (*geb-/gib-*, *gab-/gäb-*) are no longer contig-

uous. It would of course be premature to draw general conclusions from single examples; the possible allomorphic diversity of subparadigms and the interaction of stem allomorphy and affixal exponence are issues deserving more intensive comparative study.

The focus in many contributions to this volume is alternatively on nominal or verbal inflection, in line with much previous work where paradigms for different parts of speech have rarely been systematically compared. What has often been observed is that languages of the flective type tend to economise by re-using, apparently haphazardly, exponents of one part of speech also with others inflecting for different categories — as does English, where *-s* is nominal Plural or Possessive and verbal 3rd Singular Present Indicative. There are only a few hypotheses on record which point to general differences between different parts of speech with regard to the parameters primarily at issue here, inflectional homonymy and synonymy. Thus, Carstairs (1984c) maintains that nouns, being heads, will be inflectionally more complex than adjectives, being modifiers, in showing more inflection classes and less homonymy. Krámský (1976) holds that homonymy is more common in nominal than in verbal paradigms, which, to the extent that homonymy must be considered an irregularity, is confirmed by Rhodes's (1987) claim that verb inflection tends to be regular and noun inflection to be quirky. This too is a subject where theorising is sorely in need of more facts.

Preliminary though this survey was of how the abundance and scarcity of inflectional resources might be patterned, it should have sufficed to show that, in order to define such patterns, paradigms must be recognised to be more than mere unstructured collections of labelled forms. In structuring paradigms what will have to be provided for in particular are the ordering and grouping of terms realising inflectional categories, the hierarchical ranking of categories thus realised, the markedness evaluation of paradigmatic oppositions, and the singling out of one or more paradigm slots as formally more characteristic than the others.

Notes

1. An analogous case in Turkish is the old Instrumental in *-in*, as retained e. g. in *yazın* 'in summer' (with accented stem); cf. *yaz-ın* summer-Gen (with accented suffix).
2. In reference grammars *-leri* is in fact often left unsegmented, suggesting cumulative exponence of Person and Number of possessor.
3. Possibly indeed only six: an alternative Dative Singular form is *manu:*, non-distinct from Ablative Singular.

4. This adjustment has priority over that supplying postvocalic Case suffixes with initial *n|y*; thus Sg3sgPossAcc is *el-in-i* rather than *el-i-yi*.
5. The Singular pronouns are further segmentable: *b-en* 1st, *s-en* 2nd Person, with their second constituents not identical to corresponding Possessor suffixes, viz. *-im* 1st, *-in* 2nd.
6. With the possibility of membership in more than one Gender or Declension class.
7. Genuine suppletion, however, is a characteristic of pronouns rather than nouns. The only possible instance is *ne:mo(:)* 'nobody', which lacks Genitive and Ablative forms and uses the periphrastic forms *nu:lli:us hominis* and *nu:llo: homine* 'no man' instead; yet *ne:mo(:)* seems more pronominal than nominal.
8. I use the terms 'flective' and 'flexion' to refer to morphological types, and 'inflection(al)' to refer to all kinds of non-derivational bound morphology, whether of the flective or the agglutinative type. Some contributors to this volume prefer 'fusional' to 'flective' (pace Sapir 1921: ch. VI, where 'fusion', one of the characteristics of '(in)flective' languages, refers to a high "degree of coalescence between radical element and affix").
9. See Plank (1991) for a more detailed exposition of Adam Smith's typological scheme.
10. Smith in fact may have seen the implication as a two-way one (if tight cohesion, then also inflection classes), which would have disallowed this last co-occurrence.
11. See also Plank (1985) for a similar suggestion concerning the possibilities of morphological conditioning of stem allomorphy by affixes.
12. On this view the Accusative suffix *-i* in Turkish would not have to be analysed as cumulatively also expressing Definiteness.
13. See Zwicky (1985) and Carstairs (1987: ch. 4) for contemporary means to account for such differences in systematicity.
14. What may be provoked alternatively under such circumstances, according to Bazell, is over-differentiation.
15. See Comrie (1976) for a particularly convincing case study of formal and functional similarities changing in tandem.
16. For example in the manner of Williams (1981).
17. This does happen, though, with the formal forms of address: *Sie lern-en* 2nd Singular/Plural, and the pronoun here is also Number-neutral.
18. In the Genitive Number is also distinguished, redundantly, by *-s* vs. *-Ø*.
19. See Andersen (1989) for a historical survey touching on relevant matters.
20. Not included in Table 3, there are also a few nouns like *vulpe:s* 'fox' (following the pattern of *urbs* excepts for Voc/NomSg) with identical Nominative (and Vocative) Singular and Plural; their Nominative/Vocative Singular may, however, alternatively be in *-is*, which is distinctive. Masculine and Feminine relative pronouns too have identical Nominative Singular and Plural: *qui:*, *quae*.
21. A more apposite motivation is provided by Brøndal's (1943: 107) 'principe de compensation'.
22. See, for instance, Møller (1937), Georgiev (1973), Boeder (1976), O'Neil (1978), Mignot (1978), treating of various Indo-European languages.
23. The traditional order in which categories are named, on the other hand, has Cases first and Numbers second; thus: Nominative Singular rather than Singular Nominative. This actually specifies a more efficient selection procedure: If I were to select all Singular forms of, say, *manus* first, I would get six forms from which then to select the Nominative form. If going for Nominative first, the initial subset from which to chose the target form would only comprise two forms.
24. It is possible to count fewer allomorphs of Case-Number if these are separated from stem formatives. The sum total would still be impressive. And there would of course be the problem of accounting for the distribution of stem formatives as well.

25. It is, however, no foregone conclusion that Gender classification (relevant also outside the noun, i. e. for agreement) must always be secondary to classification in terms of Declension (never relevant for purposes of agreement). See e. g. Corbett (1982) for an argument that Gender classes are primary in Russian.
26. There are a number of nouns in Latin, the so-called metaplasts, which assemble their inflections less regularly.
27. Risch (1977) recognises interdependencies also in terms of derivability; thus, he holds that the Accusative Plural is derivable from the Ablative Singular by lengthening the final vowel and adding *-s*. Wurzel (1984) deals with all kinds of such interdependencies in terms of 'paradigm structure conditions', further discussed in Carstairs-McCarthy's contribution to this volume.

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