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Phonological FUSION is not the only, and probably not even the main, source of morphological CUMULATION

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**1. SEPARATIVE vs. CUMULATIVE exponents:
a minor, or at any rate an elementary, morphological distinction**

Being CUMULATIVE/SEPARATIVE is a property not of entire languages, nor of entire subsets of inflectional systems (as delimited by word classes or subclasses, such as verb vs. noun inflection), nor of entire inflectional categories (e.g., all of case inflection), but of particular **exponents** expressing particular **terms** realising particular pairs, triples, etc. of **categories** in the inflection of particular **lexemes**.

For example

The inflectional suffix /z/ of the English verb *save-s* is **cumulative**: it cumulates Person-of-subject (term: 3), Number-of-subject (term: SG), Tense (term: PRES), and Mood (term: IND).

The inflectional suffix /z/ of the English noun *save-s* is **separative**: it only expresses Number (term: PL).

That *-s /z/* in the inflection of the verb *save* co-expresses these terms of these four categories means that this segment participates in a four-way paradigmatic contrast:

<i>I/you save the queen</i>	–	<i>He saves the queen</i>	1/2 – 3 Person
<i>They save the queen</i>	–	<i>He saves the queen</i>	3PL – SG
<i>God saved the queen</i>	–	<i>God saves the queen</i>	3SG.PAST – PRES
<i>God save the queen</i>	–	<i>God saves the queen</i>	3SG.PRES.SUBJ – IND

To say that *-s /z/* is cumulative means there is no way of dividing up the phonological form of this morphological exponent, in terms of phonological **segments** or also **features**, so that its parts could be seen to systematically express the respective contrasting terms of the separate categories.

To say that *-s* expresses PRES is probably not quite the same as saying that *-s* expresses 3, SG, and IND: the contrast PRES – PAST is systematically (at least for all Persons and Numbers) expressed also through another formal contrast, zero vs. suffix *-d*, while the contrasts for the three other categories aren't. The suffix *-d* could therefore be called the **primary** exponent of PAST Tense.

I'm not sure it would be appropriate calling *-s* a **secondary** exponent of PRES Tense, with the absence of *-d* as its primary exponent. There are probably more revealing analytic ways of dealing with the fact that the PAST suffix precludes the inflection of an English verb for Person and Number (and Mood).

But one might want to draw a distinction here – although it is a subtle one – between **(co-)expressing** and **being sensitive to**. With Tense (primarily) expressed elsewhere in an English verb form, -s could be said to be sensitive to Tense, occurring only when Tense is PRES, as opposed to expressing PRES Tense.

2. SEPARATION vs. CUMULATION: a major parameter in morphological typology

How can such a small difference between individual exponents be of typological importance?

Answer: If **generalisations** about linguistic unity and diversity can be expressed in such terms.

Lo and behold, there are many generalisations on record involving this elementary difference. (Not all of them are beyond doubt: but which universals are?) Hence the typological noise that has been made about it for centuries.

First, generalisations involving **subsets of** or indeed **all inflectional exponents** of a language supposedly co-varying as to separation/cumulation

If **one** inflectional exponent in a language is separative/cumulative, then **son** or **all other** exponents in that language will be separative/cumulative too.

If only some rather than all:

..., then all exponents of the same lexeme in that language.

..., then all exponents of the same class of lexemes (nouns, verbs, ...) ...

..., then all exponents for all other terms of the same category ...

..., then all exponents for all other terms of the categories involved ...

Verb inflection is likelier than noun inflection to show cumulation.

Of all inflectional categories, Person and Number/Association are the likeliest to cumulate; for them it is indeed much likelier to be expressed cumulatively than to be expressed separately. (And notionally they **are** distinct categories (aren't they?).)

Person is likeliest to be cumulated with Number in the context of (when sensitive to or cumulated with) a JUSSIVE/HORTATIVE Mood ('let's ...'); and then it will be 1st Person which is cumulated with PLURAL/ASSOCIATIVE (Cf. Turkish *-k* 1PL, the only impeccably separative exponent of the whole language, appearing in somewhat different subsets of Moods, Aspects, and Tenses in different dialects, but arguably generalised from a jussive/hortative context. The etymology of *-k* 1PL is controversial, with Person suffixes of verbs in Altaic usually developing from independent pronouns or from possessive markers; the source of *-k* 1PL must be something else, though: most likely a jussive/hortative marker 'let', getting limited to the set of persons thus exhorted, 1PL.)

In bi-personal verb inflection, indexing Sbj as well as dObj/iObj, combinations of 1st and 2nd Person are more likely to be expressed cumulatively than are the combinations 1st:3rd, 2nd:3rd, 3rd:3rd. (Reason: face-threat in speaker-addressee interaction; so better be not too clear.)

When Case is an inflectional category, the dividing line between separation and cumulation tends to run between grammatical (especially the subject case: NOM/ABS) and local or other semantic Cases; but separation and cumulation can be found on either side of this line, with either grammatical (subject) Cases cumulative and semantic cases separative, or the other way round.

Derivation is even less likely than inflection to show cumulation.

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In sum, that is, separative and cumulative exponents shouldn't be found **randomly interspersed in any particular language**, but to be distributed along principled lines; and perhaps one or the other kind should be found to predominate.

Second, generalisations about **other morphological variables** supposedly co-varying with morphological separation/cumulation:

If separation/cumulation (predominantly, in particular subsystems), then morphological INVARIANCE/VARIANCE of exponents.

(In particular that kind of variance known as inflection classes: lexically conditioned variants of individual or whole sets of exponents.)

If separation/cumulation (predominantly, in particular subsystems), then DISTINCTNESS/SYSTEMATIC PARADIGMATIC HOMONYMY of exponents.

If separation/cumulation (predominantly, in particular subsystems), then SMALL or MODESTLY-LARGE/EXTRA-LARGE (and perhaps FUZZILY DELIMITED) inflectional PARADIGMS.

If separation/cumulation (predominantly, in particular subsystems), then LOOSE/TIGHT morphological BONDING of exponents.

(One manifestation of loose bonding: suspended affixation.)

If separation/cumulation (predominantly, in particular subsystems), then phrase/word marking.

(Corollary: phrase-internal agreement impossible/possible.)

If separation/cumulation (predominantly, in particular subsystems), then SYSTEMATIC/(at best) SPORADIC ZERO expression of unmarked terms (SG Number, NOM/ABS Case, 3rd Person, PRES Tense, IND Mood ...).

If separation/cumulation (predominantly, in particular subsystems), then marking for inflectional categories OPTIONAL/OBLIGATORY, depending on context.

If separation/cumulation (predominantly, in particular subsystems), then morphological segmentation of word forms TRANSPARENT/OPAQUE.

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That is, AGGLUTINATION vs. FLEXION seen as **multi-factorial morphological types**. Expectation again: co-variation rather than random variation on the several relevant variables; if not homogeneity, then **orderly** heterogeneity, and **predominance** of one or the other set of values.

Third, generalisations reaching **outside morphology**.

If vowel harmony (and disinclination to vowel reduction), then predominance of separation and other agglutinative values.

If predominance of separation and other agglutinative values, then basic word order SOV.

If predominance of separation and other agglutinative values, then trochaic rhythm and syllable- or mora-timing; if predominance of cumulation and other flexive values, then iambic rhythm (and whatever else rhythm implies) and stress-timing.

Fourth, **diachronic** generalisations:

The only way to get morphological cumulation from separation is through the agency of phonological **fusion**; sooner or later, but inevitably, phonological **fusion** will transform morphological separation into cumulation.

That is, structural **types** as (cyclically recurring) developmental **stages**: co-variation as co-evolution.

Constraints on crosslinguistic diversity fall out automatically from constraints on change.

From a recent textbook, Whaley 1997: 137f., invoking the authority of August Schleicher in matters of principle:

Paamese (Austronesian) (data from Crowley 1992)

*na-i-lesi-Ø	>	ni-lesi-Ø	
1SG _{Sbj} -FUT-see-3SG _{Obj}		1SG _{Sbj} .FUT-see-3SG _{Obj}	‘I will see it’
*ko-i-lesi-nau	>	ki-lesi-nau	
2SG _{Sbj} -FUT-see-1SG _{Obj}		2SG _{Sbj} .FUT-see-1SG _{Obj}	‘You will see me’

“the process whereby agglutinative languages become fusional is probably [!] due to reduction. In this case, the frequent co-occurrence of two adjacent morphemes lends itself to reanalyzing the combination as a single unit. Once this occurs, the unit may fuse together phonological and semantic features of the erstwhile morphemes.”

An aside:

The assumption, common since the 19th century, of a morphological cycle – origin of bound morphology from independent (clitic) words through univerbation, loss of morphology through phonetic erosion – does **not necessarily** suggest that, during the lifetime of morphology or as one stage of its demise, phonology fuses separate morphemes through obscuring and eliminating the boundaries between them.

3. From SEPARATION to CUMULATION: Phonological FUSION

There are two different things at issue, and it's better to have distinct terms available – CUMULATION, which is morphology, and FUSION, which is phonology. The recent tendency (originating with Sapir, of all people?) to use "fusion(al)" as a term for a morphological type is therefore regrettable.

Remember the classic textbook by Matthews 1991: 179–180, one of the very few nowadays to emphasise the distinction?

"Cumulative exponence is common, and some scholars see it as THE characteristic of flectional languages. However, it is important to distinguish it from to other cases that are superficially similar. The first is the **fused marking** that can sometimes result from processes of sandhi. The Ancient Greek word for 'golden' had a Genitive Singular Masculine, *k^hrysû:*, whose ending *-û:* represents a fusion of three formatives. One is a lexical formative (*-e-*); the second (*-o-*) is the exponent of Masculine; the third (perhaps *-o*) is that of Genitive and Singular. It is only in this last instance that there is cumulation. By the basic rule Masculine will have the simple exponent *-o-*, while *-e-* will be part of the lexical stem. Only through sandhi does *-û:* represent all of them." [Second case: **overlapping**.]

Is cumulative *-o* for GEN.SG merely **old** fusion, with sandhi phonology no longer undoable in the 1st century BCE?

Not really, it seems; no GEN and SG parts are separable, at any rate, when you go back as long as some 5,000 years.

PIE nominal inflection, as commonly reconstructed

	SG	PL	DU
NOM	-s, -Ø, -Ø/-m (NEUT)	-es, -ā/-ə (NEUT)	
VOC	-Ø, -Ø/-m (NEUT)	-es, -ā/-ə (NEUT)	-e, -ī/-i
ACC	-m/-m̐, -Ø/-m (NEUT)	-ns/-n̐s, -ā/-ə (NEUT)	
GEN	-es/-os/-s	-om/-ōm	-o(u)s
ABL	-es/-os/-s, -ed/-od	-bh(y)os, -mos	-bhyō, -mō
DAT	-ei	-bh(y)os, -mos	-bhyō, -mō
INS	-e/-o, -bhi/-mi	-bhis/-mis, -ōis	-bhyō, -mō
LOC	-i	-su	-ou
ALL	-Ø		

PIE nominal inflection, analysed as separative as far as possible

	SG	PL	DU
NOM	-s, -Ø, -Ø/-m (NEUT)	-Ø-es, -ā/-ə (NEUT)	
VOC	-Ø, -Ø/-m (NEUT)	-Ø-es, -ā/-ə (NEUT)	-e, -ī/-i
ACC	-m/-m̐, -Ø/-m (NEUT)	-m-s/-m̐-s, -ā/-ə (NEUT)	
GEN	-es/-os/-s	-om/-ōm	-o(u)s
ABL	-es/-os/-s, -ed/-od	-bh(y)o-s, -mo-s	-bhyō, -mō
DAT	-ei	-bh(y)o-s, -mo-s	-bhyō, -mō
INS	-e/-o, -bhi/-mi	-bhi-s/-mi-s, -ōi-s	-bhyō, -mō
LOC	-i	-su	-ou
ALL	-Ø		

peculiar:

- NOM (ABS?) non-zero, especially for non-neuters, high on the animacy;
- stem-Case-Number: Case inside Number, and Nmb not obviously more recent morphology;
- PLURAL in some cases based on SINGULAR, in others on DUAL.

From separation to cumulation:

by phonological fusion

ACC: V-m-s > V-n-s > \bar{V} -s

by morphological change

ABL, DAT: loss of DUAL, hence -bh(y)o-s, -mo-s > -bh(y)os, -mos

There is a wide variety of fusional (= sandhi) processes, including

- assimilation (spreading of active feature, deletion of inactive features),
- absorption (feature merging);
- epenthesis, elision;
- cluster simplification;
- shortening, lengthening (in terms of syllables or segments);
- metathesis;
- re-syllabification across morpheme boundaries.

Nonetheless, there are several conditions that must be met for fusion to be able to obscure and especially to fully obliterate morpheme boundaries and thereby bring about cumulation; these include:

- the **frequent** if not **obligatory co-occurrence** of categories whose exponents are to be fused (and their inclusion in the same level in level-ordered morphologies);
- their **adjacency** (no fusion at a distance);
[See separate study of Person and Number/Association, showing that adjacency is no significant factor in encouraging cumulation. Given a certain amount of time – like that from proto-language to current daughter languages – one would expect that Person and Number would have fused when adjacent, but not when non-adjacent. Thus, finding much more instances of adjacent than of non-adjacent separative Person and Number one can infer that adjacency didn't help them fuse – especially when one also observes that separation of Person and Number tends to run in families and is very time-stable.]

- a segmental and suprasegmental **make-up** of exponents (or also bases) rendering them **vulnerable** to fusion;
- **fusional phonology** of the right kind being active in the language concerned;
- and, in particular, the impossibility of synchronically **undoing** phonological fusion (for otherwise exponents would remain separate in morphological representations).

Morpheme boundaries **can** be irrecoverably obscured by fusional phonology:

Engl. *lord, lady* < *hlāf-weard, hlāf-dige*, with no chance of *loaf-guard* (or *-ward*), *loaf-kneaderess* being synchronically recoverable.

French *du, des; au, aux* < *de le, de les; à le, à les* (though at least in *aux* /os/ much of the obscuring was due to analogy – /as/ replaced by /os/ after *au* /o/ – rather than fusional phonology as such).

German *im* < *in d-em* LOC DEF-DAT.SG.MASC, with two separative and one cumulative segment – synchronically recoverable from *im*?

Relevant fusional rules: (i) deletion of initial consonant of enclitic definite article form unless there wouldn't be a consonant left; (ii) schwa deletion; (iii) regressive spreading of feature LAB to COR nasal; (iv) degemination. Still, /iN/ has paradigmatic support from *in, ins*; [LAB] has paradigmatic support from ((d)ə)m; and initial C and schwa deletion of enclitic def article are live (morpho)phonological processes.

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But it takes a lot for fusional phonology to irrecoverably eliminate morphological boundaries.

Especially, it needs sandhi rules not synchronically undoable – that is, rules being lost or overt contrasts being lost that would give clues that rules have done something.

Instead of what's assumed by Whaley (above), what's wrong with this?

*ko-i-lesi-nau > k-i-lesi-nau
2SG_{Sbj}-FUT-see-1SG_{Obj}

1SG _{Sbj}	na-/_C, n-/_V
2SG _{Sbj}	ko-/_C, k-/_V

and with continuingly invariant
FUT i-

Thus, even though one morphological segment is less substantial by one phonological segment, separation continues to rule ok.

Swedish

kamrat

comrade (SG, INDEF)

kamrat-er

comrade-PL (INDEF)

kamrat-en

comrade-DEF.SG

kamrat-er-na

comrade-PL-DEF.PL

Norwegian (Bokmål)

kamrat

kamrat-er

kamrat-en

kamrat-e-ne

comrade-PL-DEF.PL

kamrat-ene

comrade-(PL.)DEF.PL

PL variant: -er / -e
or fusional phonology:
r → Ø / _ N

cumulation

4. What to expect, and not to expect, if CUMULATION were only to result from FUSION

One would expect exclusively phonological patterns of the distribution of separative/cumulative exponents within and across languages.

Within languages, the dividing lines between co-existing separation and cumulation can rarely be defined phonologically; they are usually morphological lines.

Any decent sample of morphological exponents **across** the languages of the world will show a massive preponderance of separative over cumulative exponents.

Also, where **historical records** are sufficiently long (or can be reliably reconstructed), separative exponents are more frequently seen to have remained separate than to have become cumulated.

The comparative crosslinguistic frequency and the diachronic pertinacity of separation vis-à-vis cumulation confirm that the assumption of phonologically-engineered transitions is by and large implausible.

Unless ...

it is plausible to assume that languages differ **phonologically**, insofar as some languages have little or only lightly fusional phonology and others much and heavily fusional phonology – and that the former are a vast majority.

Some hints ...

Kayardild (Evans 1995: 71, 76)

“Feature blend”:

stop [+laminal] + glide [+peripheral] → glide [+laminal]
(interdentals and palatals) (bilabials and velars)

t̪-w → j yarbuth-warri → yarbuyarri
snake-PRIV

t̪-w → j warngii-j-warri → warngiiyarri
one-PRIV

“Morphophonemic changes in Kayardild are few, and do not obscure the basically agglutinative structure of the language.”

Where are the morpheme boundaries after feature blend?

They are located inside the glide, whose features are contributed by separate underlying, and recoverable, segments. Thus, some opacity about the location of the boundary, but word forms clearly recognisable as bi-morphemic.

5. Other ways of getting CUMULATION

There are sources of cumulative exponency other than phonological fusion. These include:

- the **borrowing** of cumulative exponents;
- the creation of morphology, by **univerbation**, from **words already cumulating** the categories concerned (in particular, from personal and demonstrative pronouns, liable to practise suppletion rather than affixation, hence morphologically unsegmentable);
- the morphological **reanalysis** of syntagmatic and paradigmatic **contrasts** (often involving a category with zero exponence for its unmarked term), with no formal (fusional) changes of the relevant exponents themselves, but with formal or distributional changes occurring elsewhere in the syntagm or paradigm whose effect is to

interfere with the pattern of contrasts that used to transparently motivate the separation of exponents;

- the reanalysis of **sensitive** exponence as **cumulative**, in response to other paradigmatic developments: erstwhile sensitive marker A reanalysed as cumulative when the marker B, to which A was sensitive, gets deleted in the course of time, or when it is zero to begin with, with B_{\emptyset} -A reanalysed as B.A).

English cumulative verb suffix *-s* getting de-cumulated, not through any formal changes affecting it, but through paradigmatic **extension**:

SG	1	say	say-s	say-s
	2	say	say-s	say-s
	3	say-s	say-s	say-s
PL	1	say	say	say-s
	2	say	say	say-s
	3	say	say	say-s
<i>-s</i>		3SG.PRES.IND	SG.PRES.IND	PRES.IND

This was actually the opposite direction, more to less cumulation. Analogously, increase in cumulation would occur through paradigmatic **contraction** or **local** paradigmatic **innovation/renovation**.

Latin verb inflection:

Voice (PASSIVE *-(u)r*) mostly separate from Person.Number(.Mood.Tense), but locally also cumulated with it

verb template: Stem-Theme-Person.Number-PASSIVE

		ACTIVE	PASSIVE	
SG	1	am-a-o	am-a-o-r	
	2	am-a-s	am-a-r-is	or rather CUM: am-a-ris
	3	am-a-t	am-a-t-ur	
PL	1	am-a-mus	am-a-mur	<– SEP: am-a-mus-r
	2	am-a-tis	am-a- <u>mini</u>	local innovation 2PL.PASS*
	3	am-a-nt	am-a-nt-ur	

*origin unclear:

a non-finite form (participle)?

some 2PL inflection otherwise lost?

Essentially the same story for Turkish *-k* 1PL:

first introduced into verbal Person-Number inflection in jussive/optative contexts;

then extended to further subparadigms beyond jussive/optative, including straight PAST tense in Standard Turkish.

structural **ambiguity** between separation-cum-variance and cumulation

Brahui (North Dravidian), *xal* ‘stone’

	SG	PL
NOM	<i>xal</i> (-Ø)	<i>xal</i> - <i>k</i> (-Ø)
GEN	<i>xal</i> - <i>nā</i>	<i>xal</i> - <i>tē</i> - <i>nā</i>
ACC	<i>xal</i> - <i>ē</i>	<i>xal</i> - <i>tē</i> - <i>ē</i>
DAT	<i>xal</i> - <i>ki</i>	<i>xal</i> - <i>tē</i> - <i>ki</i>
etc.		

word template:

stem-Number-Case

separative interpretation:

PL is variant, *-k* in NOM and *-tē* elsewhere
(outwards sensitivity!)

cumulative interpretation:

-k NOM.PL, *-Ø* NOM.SG

Finnish (Uralic), *talo* ‘house’

	SG	PL
NOM	<i>talo(-Ø)</i>	<i>talo-t(-Ø)</i>
GEN	<i>talo-n</i>	<i>talo-j-en</i>
PART	<i>talo-a</i>	<i>talo-j-a</i>
INESS	<i>talo-ssa</i>	<i>talo-i-ssa</i>
etc.		

word template: stem–Number–Case

separative interpretation: PL is variant, *-t* in NOM and *-i/-j* elsewhere
(outwards sensitivity!)

cumulative interpretation: *-t* NOM.PL, *-Ø* NOM.SG

Summary

What our current crosslinguistic sample of different types of exponents shows, in conjunction with the evidence of their (morphologically defined) distributions across paradigms with splits between separation and fusion, is that cumulation most commonly originates from **source words already cumulative** (pronouns; hence. e.g., the clear predominance of cumulation over separation of Person and Number in verb inflection) and from **paradigmatic reanalyses**, rather than from phonological **fusion**.

Very likely, separation/cumulation is a **significant parameter for morphological typology**

- (i) because of some timeless laws linking separation/cumulation with some other morphological variables and
- (ii) because most separative/cumulative exponents owe their existence to morphological changes of structural significance.

Due to timeless/panchronic laws:

Systematic homonymy found with cumulative and variant exponents, because of desirability to economise on forms when they threaten to be too numerous – and cumulation and variance are both inherently more uneconomical than separation and invariance.

Invariant rather than variant cumulative exponents found for marked terms or in the company of marked terms, because of the markedness law requiring complexity to be minimised in environments already complex.

Due to diachronic laws:

Origins of cumulation in structures **ambiguous** between separative and cumulative interpretations – structures which will involve zero exponence (for unmarked term) and variance – would account for an otherwise mysterious typological implication, the link between **cumulation** and **variance**, each one adding to complexity of inventories, hence (one would expect) doubly bad in combination.

But then, the other direction – **from cumulation to separation** – is the more popular one.

It's generally **easier** to morphologically reanalyse cumulative exponents as separative than the other way round (paradigmatic **extension** rather than contraction; analogical **segmentation** giving two separate forms for two separate categories).

Also, in competition, as in language **contact**, separation is usually dominant and cumulation usually recessive.

(Examples: cumulative Greek in contact with separative Turkish in Cappadocia; north-eastern Iranian Indo-European, hence cumulative Ossetic or Sogdian in contact with separative Altaic and Caucasian; ...)

So, no wonder separation will prevail over cumulation, sooner or later.

THE END, for now.

Abstract

A major parameter in the typological distinction between agglutination and flexion is whether the exponents of morphological categories – such as number and case in nominal inflection, person and number in verb agreement – are expressed separately or are cumulated when they co-occur. Since the origins of morphological typology, and across the different conceptual and descriptive frameworks for dealing with morphological diversity, it has been generally assumed that the relevant differences have a rationale which is at heart diachronic: flexion (only) develops from agglutination, and phonological fusion is the (sole) agency responsible for transforming separative into cumulative exponents. (Hence the widespread use of "fusional" as the generic designation of flexional languages.)

Our aims in this paper are twofold, though complementary. First, we will suggest that there are severe limitations on the morphological effectiveness of phonological fusion. There is a wide variety of fusional processes, including assimilation (feature spreading), absorption (feature sharing); epenthesis, elision; shortening, lengthening; metathesis; re-syllabification. Nonetheless, there are several conditions that must be met for fusion to be able to obscure and especially to fully obliterate morpheme boundaries and thereby bring about cumulation; these include the obligatory co-occurrence and typically the adjacency of categories whose exponents are to be fused (and their inclusion in the same level in level-ordered morphologies); their high frequency of (co-)occurrence; a segmental and suprasegmental make-up of exponents (or also bases) rendering them vulnerable to fusion; fusional phonology of the right kind being active in the language concerned; and, in particular, the impossibility of synchronically undoing phonological fusion (for otherwise exponents would remain separate in morphological

representations). Any decent sample of morphological exponents across the languages of the world (or even only of inflectional exponents, with derivation tending towards separation anyhow) will show a massive preponderance of separative over cumulative exponents; also, where historical records are sufficiently long (or can be reliably reconstructed), separative exponents are more frequently seen to have remained separate than to have become cumulated. The comparative crosslinguistic frequency and the diachronic pertinacity of separation vis-à-vis cumulation, as to be illustrated in this paper, thus, confirm the difficulty of phonologically-engineered transitions.

Second, we will identify and illustrate sources of cumulative exponency other than phonological fusion. These include the borrowing of cumulative exponents; the creation of morphology, by univerbation, from words already cumulating the categories concerned (in particular, from personal and demonstrative pronouns, liable to practise suppletion

rather than affixation); the morphological re-analysis of syntagmatic and paradigmatic contrasts (often involving a category with zero exponence for its unmarked term), with no formal (fusional) changes of the relevant exponents themselves, but with formal or distributional changes occurring elsewhere in the syntagm or paradigm whose effect is to interfere with the pattern of contrasts that used to transparently motivate the separation of exponents; the re-analysis of sensitive exponence as cumulative, in response to other paradigmatic developments. What our current crosslinguistic sample of different types of exponents shows, in conjunction with the evidence of their distribution across paradigms with splits between separation and fusion, is that cumulation most commonly originates from source words already cumulative (pronouns; hence. e.g., the clear predominance of cumulation over separation of person and number in verb inflection) and from paradigmatic re-analyses, rather than from fusion.