

Paradigms Large and Small

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Paradigms Large and Small

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Most widely accepted approaches to morphology acknowledge that affixation is of two types: inflection and derivation. In the clearest cases, inflection is syntactically governed (e.g. agreement), productive, regular, and does not affect the category of the inflected word. In contrast the clear instances of derivation either add a semantic element (e.g. diminutive) or change the category of a form or both. Derivation is frequently irregular—semantically, phonologically, and/or morphologically. As we all know this simple picture does not tell the whole story. There are intermediate cases of all types. Plural, for example, is usually considered an inflection. However plural is an added semantic element, and it is not hard to find languages with significant irregularity in their plural marking systems. Similarly tense and aspect are generally considered inflections, again tense and aspect are added semantic elements, and many languages display significant irregularities in tense/aspect marking. In spite of these sorts of cases most of us feel that the distinction between inflection and derivation is, or would be, useful, if only we could put our finger on it.

In this paper I want to step back and take a look at morphology construed paradigmatically, and make a number of observations that will, I hope, enable us ultimately to develop a more rigorous view of the distinction between inflection and derivation. In specific I will show that there is an interesting correlation of properties among paradigms defined in certain ways. Then I will argue that some of the traditionally accepted grounds for contrasting inflection and derivation follows from some facts that themselves follow from these correlations.

The first task at hand is to characterize the class of morphological entities that count as paradigms for the purposes of this study. I will do this by a series of successive approximations. The first of which will require the definition of the notion *morphologically related*: a set of forms is morphologically related if they all share the same morpheme. This allows us to define the first constraint on the set of entities we want to treat as paradigms: a paradigm is a set of morphologically related words.² It turns out that to achieve the results we want the notion of paradigm has to be more restrictive: a paradigm is a set of morphologically related words which all participate in the same morphological construction.³ Thus although the English words *superfluous* and *insuperable* are morphologically related, they are not in the same paradigm because they do not participate in the same morphological construction. On the other hand *work*, *works*, *working*, and *worked* do belong to the same paradigm because they do participate in the same morphological construction.

As a first approximation let me distinguish two types of morphemes, those that belong to large, and possibly but not necessarily, open sets

and those that belong to small, closed sets. The intuition I am after is that of stem versus affix, which terms I will use for the large and small sets respectively. Put another way, affixes are the morphological equivalent of function words. Of course, if one pushes this preliminary characterization too hard, the distinction will fuzz out, but at the degree of approximation we are currently dealing with, it will do: a paradigm is a set of words morphologically related via their stems, which all participate in the same morphological construction.⁴ Finally, some of the properties we will look at require a completeness clause be added the definition: *a paradigm is a complete set of the words morphologically related via their stems, which all participate in the same morphological construction.*

There are a few more wrinkles which I will sketch informally. The first is that a suppletion clause needs to be added, allowing for the case in which a semantically consistent but morphologically unrelated form substitutes for a point in a paradigm. Thus *go, goes, going, went, gone* constitutes a paradigm under the suppletion clause. Another wrinkle is that certain affixes (in English predominantly prefixes) may act as part of stems in such a way that they do not count in the completeness clause. Thus the completeness clause does not obligate us to treat the sets of forms *commit, commits, committing, committed* and *emit, emits, emitting, emitted* as parts of the same paradigm even though both contain a stem *-mit*.

Given the above characterization of a paradigm, we can define a paradigm set as a complete set of paradigms which differ only in their stems.⁵ Paradigm sets fall into two types across languages. The contrast between these two types is summarized in Table I.

Type I Paradigm sets	Type II Paradigm sets
—show few classes	—show many classes
—have regular morphophonemics ⁶	—may have problematic or irregular morphophonemics
—are filled out	—may have “holes”
—have meanings which are the sum of the meanings of their parts	—may have idioms
—morphemic complexes show no idiosyncratic class properties	—morphemic complexes may have idiosyncratic class properties

Table I

Many languages have paradigm sets showing just such contrasting properties. Those that I have examined in detail include Latin, Zoque, and Ojibwa. This difference in paradigm set type correlates in an interesting way with another property of paradigms have, namely that of size. If a paradigm is large, i.e. if there are lots of affixes and affixes combinations on a single stem, it always belongs to a type I paradigm set. On the other hand paradigms belonging to type II paradigm sets are always small, i.e. a single stem can take only a few affixes or affix combinations. Notice that this claim about paradigm sets is

independent of whether the paradigms are inflectional or derivational.⁷ Due to limitations on length there is in this paper only space enough to show that both type I and type II paradigm sets appear in inflection. There are languages in which one can show that this distinction in paradigm set type also crosscuts derivation. I will illustrate the type distinction in inflectional paradigms by contrasting the Latin verbal inflection with Latin nominal inflection.

In Latin verb paradigms are large, on the order of 200 points in the paradigm, but Latin nominal paradigms are small containing 12 forms.⁸ Latin verbs form a type I paradigm set. Latin nouns form a type II. First we will show that verb conjugation forms a type I paradigm set.

Latin verbs fall into only five classes. Next to thousands of verb stems that fall into these five, there are only four irregular verbs and three of them are only marginally irregular. In fact, with some fairly straightforward and regular morphophonemics the five verb classes and the three marginally irregular verbs can be reduced to a single class, although I will not be able to show that here. The Latin verb is laid out, by tenses, subjunctivity, and voice, in (1) through (6).

(1) Imperfective indicative tenses

I	'love' amáre	<i>first person</i>	<i>second person</i>	<i>third person</i>
	<i>present</i>	<i>sg.</i> amó	amás	amat
		<i>pl.</i> amámus	amátis	amant
	<i>imperfect</i>	<i>sg.</i> amábam	amábás	amábat
		<i>pl.</i> amábámus	amábátis	amábant
	<i>future</i>	<i>sg.</i> amábó	amábís	amábit
		<i>pl.</i> amábimus	amábítis	amábunt
II	'wam' monére	<i>present</i>	moneó	monés
			monémus	monétis
		<i>imperf.</i>	monébam, etc.,	<i>future</i> monébo, etc.
III	'rule' regere	<i>present</i>	regó	regis
			regimus	regitis
		<i>imperf.</i>	regébam, etc.	
		<i>future</i>	regam	regés
			regémus	regétis
III-i	'take' capere	<i>present</i>	capió	capis
			capimus	capitis
		<i>imperf.</i>	capiébam, etc.,	<i>future</i> capiam, etc.
IV	'hear' audíre	<i>present</i>	audió	audís
			audímus	audítis
		<i>imperf.</i>	audiébam, etc.,	<i>future</i> audiam, etc.
irreg	'bear' ferre	<i>present</i>	feró	fers
			ferimus	fertis
		<i>imperf.</i>	ferébam, etc.,	<i>future</i> feram, etc.
(4 stems)				

(2) Imperfective subjunctive tenses

I	<i>present</i>	<i>sg.</i>	amem	amés	amet
		<i>pl.</i>	amémus	amétis	ament
	<i>imperfect</i>	<i>sg.</i>	amárem	amárés	amáret
		<i>pl.</i>	amárémus	amárétis	amárent
II	<i>present</i>	<i>sg.</i>	moneam	moneás	moneat
		<i>pl.</i>	moneámus	moneátis	moneant
	<i>imperfect</i>		monérem, etc.		
III	<i>present</i>		regam, etc.	<i>imperfect</i>	regerem, etc.
III-i	<i>present</i>		capiam, etc.	<i>imperfect</i>	caperem, etc.
IV	<i>present</i>		audiam, etc.	<i>imperfect</i>	audírem, etc.
irreg	<i>present</i>		feram, etc.	<i>imperfect</i>	ferrem, etc.

(3) Perfective indicative tenses (identical in all classes)

<i>present</i>	<i>sg.</i>	amáví	amávistí	amávít
	<i>pl.</i>	amávimus	amávistis	amávérunt/-ére
<i>past</i>	<i>sg.</i>	amáveram	amáverás	amáverat
	<i>pl.</i>	amáverámus	amáverátis	amáverant
<i>future</i>	<i>sg.</i>	amáveró	amáveris	amáverit
	<i>pl.</i>	amáverimus	amáveritis	amáverint

(4) Perfective subjunctive tenses (identical in all classes)

<i>perfect</i>	<i>sg.</i>	amáverim	amáverís	amáverít
	<i>pl.</i>	amáverímus	amáverítis	amáverint
<i>pluperfect</i>	<i>sg.</i>	amávissem	amávissés	amávisset
	<i>pl.</i>	amáverissémus	amávissétis	amávissent

(5) Passive of imperfective indicative tenses

I	'be loved'	<i>amárí</i>	<i>first person</i>	<i>second person</i>	<i>third person</i>
		<i>present</i>	<i>sg.</i>	amor	amáris
		<i>pl.</i>	amámur	amámíní	amantur
	<i>imperfect</i>	<i>sg.</i>	amábar	amábáris/-báre	amábátur
		<i>pl.</i>	amábámur	amábáminí	amábantur
	<i>future</i>	<i>sg.</i>	amábor	amábiris/-bire	amábitur
		<i>pl.</i>	amábimur	amábiminí	amábuntur
II	'be warned'	<i>pres.</i>	moneor	monéris	monétur
		<i>monérfí</i>	monémur	monéminí	monentur
		<i>imperf.</i>	monébar, etc., fut.	monébor, etc.	
III	'be ruled'	<i>pres.</i>	regor	regeris	regitur
		<i>regí</i>	regimur	regiminí	reguntur
		<i>imperf.</i>	regébar, etc.		
			regar	regéris/-ére	regétur
			regémur	regéminí	regentur

(5) Passive of imperfective indicative tenses (*cont.*)

III-i 'be taken' <i>pres.</i>	<i>capior</i>	<i>caperis</i>	<i>capitur</i>
<i>capí</i>	<i>capimur</i>	<i>capimini</i>	<i>capiuntur</i>
<i>imperf.</i>	<i>capiebar, etc., fut. capiar, etc.</i>		
IV 'be heard' <i>pres.</i>	<i>audior</i>	<i>audiris</i>	<i>auditur</i>
<i>audíri</i>	<i>audimur</i>	<i>audimini</i>	<i>audiuntur</i>
<i>imperf.</i>	<i>audiebar, etc., fut. audiar, etc.</i>		
irreg 'be born' <i>pres.</i>	<i>feror</i>	<i>ferris</i>	<i>fertur</i>
<i>ferri</i>	<i>ferimur</i>	<i>ferimini</i>	<i>feruntur</i>
(4 stems) <i>imperf.</i>	<i>ferébar, etc., fut. ferar, etc.</i>		

(6) Passive of imperfective subjunctive tenses

I <i>present</i>	<i>sg.</i>	<i>amer</i>	<i>améris/-ére</i>	<i>amétur</i>
	<i>pl.</i>	<i>amémur</i>	<i>amemini</i>	<i>amentur</i>
<i>imperfect</i>	<i>sg.</i>	<i>amárer</i>	<i>amáris/-rére</i>	<i>amárétur</i>
	<i>pl.</i>	<i>amáremur</i>	<i>amáremini</i>	<i>amárentur</i>
II <i>present</i>	<i>sg.</i>	<i>monear</i>	<i>moneáris/-áre</i>	<i>moneátur</i>
	<i>pl.</i>	<i>moneámur</i>	<i>moneámini</i>	<i>moneantur</i>
<i>imperfect</i>	<i>monéer, etc.</i>			
III <i>present</i>	<i>regar, etc. imperfect regerer, etc.</i>			
III-i <i>present</i>	<i>capiar, etc. imperfect caperer, etc.</i>			
IV <i>present</i>	<i>audiar, etc. imperfect audírer, etc.</i>			
irreg <i>present</i>	<i>ferar, etc. imperfect ferrer, etc.</i>			

Not included in these paradigms are infinitives (other than for citation purposes), imperatives, participles, and periphrastic tenses (i.e. perfective passives) which do not fit the same construction types as the finite forms. Loosening our definition of paradigm slightly to include any of these forms would not affect the result at all. Latin verb conjugation is thoroughly regular.

Now contrast this regularity with the quirkiness of Latin noun declension. Grammar books lay out a neat system of five declensions, quietly acknowledging that there are a few minor variants. (In particular Classes II, III, and III-i have neuter variants.) The basic facts are outlined in (7).

In spite of what the grammar books say, a rigorous analysis shows that upwards of twenty classes are necessary. In fact, all the textbook declensions turn out to be groups of several closely related classes rather than single homogenous classes. While the grammars acknowledge two kinds of third declension nouns, neuters aside, as in (7a), consider just the forms in (8) which show that there are more than 11 classes of such nouns.

(7) (a)		<i>nom.</i>	<i>gen.</i>	<i>dat.</i>	<i>acc.</i>	<i>abl.</i>
I	'girl'	<i>puella</i>	<i>puellae</i>	<i>puellae</i>	<i>puellam</i>	<i>puellá</i>
		<i>puellí</i>	<i>puellárum</i>	<i>puellís</i>	<i>puellás</i>	<i>puellís</i>
II	'servant'	<i>servus</i>	<i>serví</i>	<i>servó</i>	<i>servum</i>	<i>servó</i>
		<i>serví</i>	<i>servórum</i>	<i>servís</i>	<i>servós</i>	<i>servís</i>
III	'leader'	<i>dux</i>	<i>ducis</i>	<i>ducí</i>	<i>ducem</i>	<i>duce</i>
		<i>ducés</i>	<i>ducum</i>	<i>ducibus</i>	<i>ducés</i>	<i>ducibus</i>
III-i	'cough'	<i>tussis</i>	<i>tussis</i>	<i>tussí</i>	<i>tussim</i>	<i>tussí</i>
		<i>tussés</i>	<i>tussium</i>	<i>tussibus</i>	<i>tussís</i>	<i>tussibus</i>
IV	'fruit'	<i>fructus</i>	<i>fructús</i>	<i>fructuí</i>	<i>fructum</i>	<i>fructú</i>
		<i>fructús</i>	<i>fructuum</i>	<i>fructibus</i>	<i>fructús</i>	<i>fructibus</i>
V	'thing'	<i>rés</i>	<i>reí</i>	<i>reí</i>	<i>rem</i>	<i>ré</i>
		<i>rés</i>	<i>rérum</i>	<i>rébus</i>	<i>rés</i>	<i>rébus</i>

(b)		<i>nom.</i>	<i>gen.</i>	<i>dat.</i>	<i>acc.</i>	<i>abl.</i>
II	'war'	<i>bellum</i>	<i>bellí</i>	<i>belló</i>	<i>bellum</i>	<i>belló</i>
		<i>bella</i>	<i>bellórum</i>	<i>bellís</i>	<i>bella</i>	<i>bellís</i>
III	'name'	<i>nomen</i>	<i>nominis</i>	<i>nominí</i>	<i>nomen</i>	<i>nomine</i>
		<i>nomina</i>	<i>nominum</i>	<i>nominibus</i>	<i>nomina</i>	<i>nominibus</i>
III-i	'animal'	<i>animal</i>	<i>animalis</i>	<i>animalí</i>	<i>animal</i>	<i>animalí</i>
		<i>animalia</i>	<i>animalium</i>	<i>animalibus</i>	<i>animalia</i>	<i>animalibus</i>

(8)	<i>nom sg</i>	<i>acc sg</i>	<i>abl sg</i>	<i>gen pl</i>	<i>nom pl</i>
(a)	<i>dux</i>	<i>ducem</i>	<i>duce</i>	<i>ducum</i>	<i>ducés</i>
(b)	<i>canis</i>	<i>canem</i>	<i>cane</i>	<i>canum</i>	<i>canés</i>
(c)	<i>clávis</i>	<i>clávem/-im</i>	<i>cláve/-í</i>	<i>clávium</i>	<i>clávés</i>
(d)	<i>ovis</i>	<i>ovem</i>	<i>ove</i>	<i>ovium</i>	<i>ovés</i>
(e)	<i>avis</i>	<i>avem</i>	<i>ave/-í</i>	<i>avium</i>	<i>avés</i>
(f)	<i>ménsis</i>	<i>ménsem</i>	<i>ménse</i>	<i>ménsium/-ium</i>	<i>ménsés</i>
(g)	<i>hostis</i>	<i>hostem</i>	<i>hoste</i>	<i>hostium</i>	<i>hostés/-is</i>
(h)	<i>sors</i>	<i>sortem</i>	<i>sorte/-í</i>	<i>sortium</i>	<i>sortés</i>
(i)	<i>pars</i>	<i>partem/-im</i>	<i>parte/-í</i>	<i>partium</i>	<i>partés</i>
(j)	<i>ígnis</i>	<i>ígnem</i>	<i>ígne/-í</i>	<i>ígnium</i>	<i>ígnés/-is</i>
(k)	<i>tussis</i>	<i>tussim</i>	<i>tussí</i>	<i>tussium</i>	<i>tussés/-is</i>

et al. (unmentioned forms declined identically)

Granted the group of classes representing the third declension is the most diverse, nonetheless the data for it and for the other groups of classes is much more diverse and morphophonemically intractable, even within each group of classes, than is traditionally assumed.

A second way in which Latin nominal paradigms differ from Latin verbal paradigms is that there are many nouns which have forms from more than one class. Generally the forms of the singular are from one class and the forms of the plural are from another. In traditional Latin grammar these nouns are known either as *heteroclites* or as *heterogenous nouns* depending on whether the class difference involves a shift in gender. Some examples are given in (9).

(9)	<i>nom.</i>	<i>gen.</i>	<i>dat.</i>	<i>acc.</i>	<i>abl.</i>
(a)	Mixed classes of the same gender (heteroclitics)				
'vessel'	vás	vásis	vásí	vás	váse
(III/II <i>n</i>)	vása	vásórum	vásís	vása	vásís
'acre'	júgerum	júgerí	júgeró	júgerum	júgeró
(II/III <i>n</i>)	júgera	júgerum	júgeribus	júgera	júgeribus
(b)	Mixed gender classes (heterogenous nouns)				
'bridle'	frénium	fréní	frénó	frénium	frénó
(II <i>n/m</i>)	fréní	frénórum	frénís	frénós	frénís
'jest'	jocus	jocí	jocó	jocum	jocó
(II <i>m/n</i>)	joca	jocórum	jocís	joca	jocís
	et al.				

Another way in which Latin nominal paradigms differ from Latin verbal paradigms is that there are many nouns which lack one or more inflectional forms. In traditional Latin grammar these nouns are known as *defective*. This is exemplified in (10). In addition most fifth declension nouns have only nominative and accusative plural, and there are numerous nouns which are declined only in the plural.

(10)	<i>nom.</i>	<i>gen.</i>	<i>dat.</i>	<i>acc.</i>	<i>abl.</i>
'order'	<i>sg.</i> —	—	—	—	jussú
'non-order'	<i>sg.</i> —	—	—	—	injussú
'birth'	<i>sg.</i> —	—	—	—	nátú
'chance'	<i>sg.</i> fors	—	—	—	forte
'freewill'	<i>sg.</i> —	spontis	—	—	sponte
'nothing'	<i>sg.</i> nihil/níl	—	—	nihil/níl	—
'right'	<i>sg.</i> fás	—	—	fás	—
'wrong'	<i>sg.</i> néfás	—	—	néfás	—
'sex'	<i>sg.</i> secus	—	—	secus	—
'morning'	<i>sg.</i> máne	—	—	máne	—
'attack'	<i>sg.</i> impetus	—	—	impetum	impetú/-e
	<i>pl.</i> impetús	—	—	impetús	—
'request'	<i>sg.</i> —	—	precí	precem	prece
	<i>pl.</i> precés	precium	precibus	precés	precibus
'force'	<i>sg.</i> vís	—	—	vim	ví
	<i>pl.</i> vírés	vírium	víribus	vírés	víribus
'tum'	<i>sg.</i> —	vicis	vicí	vicem	vice
	<i>pl.</i> vicés	—	vicibus	vicés	vicibus
'power'	<i>sg.</i> —	opis	opí	opem	ope
	<i>pl.</i> opés	opum	opibus	opés	opibus
'banquet'	<i>sg.</i> —	dapis	dapí	dapem	dape
	<i>pl.</i> dapés	dapum	dapibus	dapés	dapibus
'fruit'	<i>sg.</i> —	frúgis	frúgí	frúgem	frúge
	<i>pl.</i> frúgés	frúgum	frúgibus	frúgés	frúgibus

et al.

Yet another way in which Latin nouns are quirky in a way the verbs are not is that some case forms can be used idiomatically on certain nouns stems, as in (11). The form *máne* 'morning' (*nom/acc*) in (11a) may be used as an ablative. The ablative singular of some fourth and fifth declensions may be used as a dative (11b). This is the regular treatment of fourth declension neuters. The ablative singular of fourth declension neuters is regularly used as the genitive (11c)

(11) (a) *ad ipsum máne* 'on [that] very morning' *acc*
multó máne 'very early in the morning' *abl*

(b) *frúctú* for *frúctú* 'fruit,'
cornú for **cornú* 'horn,'
genú for **genú* 'knee,'
verú for **verú* 'spit,'
acié for *aciét* 'point'

(c) *cornú* for **cornús* 'horn,'
genú for **genús* 'knee,'
verú for **verús* 'spit'

and a few others

In the grammars most such instances are treated as syncretism.

Finally nominal declension shows a lot of suppletion, mostly in the nominative, as exemplified in (12).

(12)	<i>nom.</i>	<i>gen.</i>	<i>dat.</i>	<i>acc.</i>	<i>abl.</i>
'no one'	<i>némó</i>	<i>núllfús</i>	<i>némínf</i>	<i>némínem</i>	<i>núlló</i>
'Juppiter'	<i>Juppiter</i>	<i>Jovis</i>	<i>Joví</i>	<i>Jovem</i>	<i>Jove</i>
'old man'	<i>senex</i>	<i>senis</i>	<i>sení</i>	<i>senem</i>	<i>sene</i>
	<i>senés</i>	<i>senum</i>	<i>senibus</i>	<i>senés</i>	<i>senibus</i>
'meat'	<i>caró</i>	<i>carnis</i>	<i>carní</i>	<i>camem</i>	<i>carne</i>
	<i>carnés</i>	<i>camium</i>	<i>camibus</i>	<i>camés</i>	<i>camibus</i>
'way'	<i>iter</i>	<i>itineris</i>	<i>itinerí</i>	<i>iter</i>	<i>itinere</i>
	<i>itinerá</i>	<i>itinerum</i>	<i>itineribus</i>	<i>itinerá</i>	<i>itinerá</i>

et al.

Thus we have seen the contrast between the starkly regular conjugation of Latin verbs that is characteristic of type I paradigms and the irregularity of Latin noun declension that defines type II paradigms.

Now one might ask: is it really the size that correlates with type I and type II paradigms? After all the pattern in Latin is repeated in both Algonquian and Mixe-Zoquean languages. The verbs are regular and the nouns have quirks. But the answer is clearly no. There are languages in which noun inflection is quite regular, e.g. Spanish. Notice also that Spanish nouns form small paradigms, having only two points. Showing the asymmetry of the size type relation. This asymmetry can be summarized as in (13).

(13)		large	small
	Type I	+	+
	Type II	—	+

By now students of Latin are probably squirming because there are, in fact, some irregularities in Latin verb inflection. Looking at them is instructive. Interestingly almost all of the irregularity in Latin verbs is centered on combinations of the stem plus the next morpheme immediately to its right (which is sometimes zero). Together these two morphemes together make up what are traditionally called the perfective and imperfective stems. Let me call the complex of a stem plus a morpheme from an immediately adjacent slot in the morphemic construction an *extended stem*.⁹ The complete set of structurally identical extended stems constitutes an *inner paradigm*.

In Latin the inner paradigm of stem plus aspect marker is small, having two points, and it acts like a type II paradigm. It has numerous classes (upwards of thirty) and shows morphophonemic irregularity, as in (14).

(14)		<i>stem + imperfective</i>	<i>stem + perfective</i>
	'love'	amá-	amáv-
	'tame'	domá-	domu-
	'wash'	lavá-	láv-
	'stand'	stá-	stet-
	'advise'	moné-	monu-
	'stay'	mané-	máns-
	'bite'	mordé-	momord-
	'rule'	reg-	rét-
	'tear apart'	scind-	scid-
	'do'	ag-	ég-
	'allow'	sin-	sív-
	and many others		

It shows irregularity in combinations with other morphemes (in this case prefixes), as in (15).

(15)		<i>stem + imperfective</i>	<i>stem + perfective</i>
	'gather, read'	leg-	lég-
	<i>but</i> 'understand'	intelleg-	intelléx-
	'buy, take'	em-	ém-
	<i>but</i> 'take away'	dém-	démps-
	'separate'	cern-	—
	<i>but</i> 'distinguish'	discern-	discrév-

It has holes, as in (16).

(16)	<i>stem + imperfective</i>	<i>stem + perfective</i>
'wish'	avé-	—
'choke'	ang-	—
'shake'	quat-	—
'prop up'	amicf-	—
'begin'	—	coep-

It has some idioms—extended stems that are perfective in form but imperfective in meaning, as in (17).

(17)	'remember'	memin-	(meminí, memínistí, etc.)
	'hate'	ód-	(ódí, ódistí, etc.)

Having, I hope, made a convincing argument that there is a real difference between type I paradigm sets and type II paradigm sets, I will conclude by arguing that the difference between type I and type II paradigms is that type I paradigms, the type that are regular, are compositional (Anderson, 1977, 1982) but type II paradigms, the type that are irregular, are lexicalized (Jensen and Jensen, 1984).¹⁰ From this follow the size correlates. If a paradigm set consists of large paradigms they must be compositional (for noetic reasons) and therefore will tend to be regular, as type I paradigm sets are. But if a paradigm is small all the points of all the stems could be lexicalized, or more likely, all the points of many of the stems could be lexicalized. Either way this would set up the initial conditions for irregularities of the sort we have seen are characteristic of the paradigms in type II paradigm sets. Furthermore there is no reason why a small paradigm *must* be lexicalized, thus there can be type I small paradigm sets.

Of course this report is preliminary in many ways. First the working definitions used here still appeal to the intuitions of the linguist rather than being mechanically rigorous.

Secondly languages differ widely in whether they have both types of paradigms and to what extent. On the one hand Altaic languages seem have almost only type I paradigm sets, even in derivation, while Germanic languages seem to major in type IIs.

Thirdly there is more subtlety to the difference between type I paradigm sets and type II paradigm sets than this brief overview suggests. When it gets refined the distinction boils down roughly to whether or not there are points in a morphological construction across which morphemic combination is regular.¹¹ Type I paradigms have such points. Type II paradigms don't. In fact I have a suspicion that the situation is even subtler. I would claim, in the spirit of natural morphology, that there is a tension between compositionality and lexicalization. In one direction the paradigms all warranted by the same morphological construction can be lexicalized one by one.¹² In the other lexicalized paradigms can be treated as though they were compositional yielding cases of analogy.

Lastly there is the very interesting question of how many points

there need to be in a paradigm for it to be large enough to force compositionality.

In conclusion, I would like to propose a reexamination of the prototypes of inflection and derivation in light of the type of theory of morphology espoused here—one which allows for both compositionality and lexicalization. Since derivation tends to involve small paradigms while inflection may involve either large or small paradigms, some of the prototypical properties of derivation follow from the predominantly lexicalized type of morphology they involve. On the other hand, the attempt to provide a contrastive prototype of inflection has led to viewing inflection as prototypically compositional. I hope that having shown that compositionality is a parameter independent of the parameter of inflection/derivation will lead to a clearer characterization of the latter, very useful distinction.

FOOTNOTES

¹This paper has benefited greatly from the comments of Karl Zimmer, Fred Lupke, Gary Holland, Arnold Zwicky, Michele Emanation, Jim Watters, and Dave Costa. All the usual disclaimers apply.

²Since I am approaching this by approximations, I will let the rather vague and intuitive notion of *word slip* by here. All that is important at this point is that paradigms be made of forms that native speakers find to be independently manipulable. In a more rigorous account more would have to be said.

³The question of how to define sameness among morphological constructions is a thorny one. For example, in the Latin examples given below, I will omit the imperative and non-finite forms of verbs because they participate in constructions different in detail from the finite forms, but intuitively it seems that they should be counted as part of the same paradigm. How to do this is not, at the moment, clear.

⁴The traditional notion of head could probably lead to a better approximation, but in view of the variety of uses of the term *head* current in linguistics today, I have decided to steer clear of it.

⁵The term *paradigm* is used ambiguously between the two senses that we are distinguishing here: *paradigm* and *paradigm set*.

⁶On close examination this property seems actually to be somewhat more difficult to characterize. The characterization is not that the morphophonemics are simple, just that they are regular. Furthermore the internal structure of the paradigm shell, that thing that is left when the stem is removed, may be morphophonemically irregular and/or problematic, and that doesn't negate the characterization of the paradigm as morphophonemically regular.

⁷It can be argued that derivation is different from inflection in that there aren't (or often aren't) real paradigms in derivation. To the extent that the best examples of paradigms neatly align meaning and form, derivationally related forms frequently don't provide very good examples of paradigms. On the other hand by using a formally based

definition of paradigm, any semantic incoherence and or morpheme slot optionality ceases to be a problem at this level. Thus we can look at both inflection and derivation together for our purposes here. Of course this is motivated by the existence of languages in which aspects of what is unquestionably derivation have all the formal earmarks usually associated with inflection (Algonquian verb stem derivation being one example). The desideratum is thus to have a system which will enable a uniform view of inflection and derivation at least for some purposes.

⁸Depending on how one treats the systematic homophony of dative and ablative plural, the count could be 11 forms.

⁹In fact this should be defined recursively, i.e. extended stems can be based on extended stems.

¹⁰It is worth pointing out that recent work by morphologists using Latin have chosen either to emphasize the regularities (e.g. Matthews, 1972, Williams, 1981, Lieber 1981) or the irregularities (Ford and Singh, 1985), but no one has considered a system in which both regularity and irregularity exist side-by-side.

¹¹It cannot be overemphasized that regular does not entail simple. The morphophonemics could be quite intricate at the relevant point in the construction. All that is important is that it is regular.

¹²Or even subparadigm by subparadigm, where a subparadigm is the complete set of forms built on an extended stem. The result would be that there is a mixed type of paradigm set in which some of the paradigms act like they belong to a type I set and some like they belong to a type II set.

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