The significance of "potentiation" for morphological theory

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OUTLINE

1. What is potentiation?

Aronoff (1976: 53–63) argues that a word-formation rule has at least two parts:

First, there is a part which specifies the syntactic and semantic characteristics. There will be no disjunction in the specification of these characteristics, and no negation. The semantics of the output of the [word-formation rule] is specified here as a compositional function of the base.

Second, there is a series of positive conditions on the morphology of the base. These conditions are associated with productivity and semantic coherence (which are, in a sense, the same thing). (pp. 62f)

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Rule of negative *un#* (Aronoff 1976: 63)

 a. $[X]_{Adj} \rightarrow [un\#[X]_{Adj}]_{Adj}$
    semantics (roughly) un#X = not X

 b.   Forms of the base
    1. $X_V$en (where *en* is the marker for past participle)
    2. X_V#ing
    3. X_V#able
    4.   X+y   (worthy)
    5.   X+ly   (seemly)
    6.   X#ful   (mindful)
    7.   X-al   (conditional)
    8.   X#like   (warlike)

1. What is potentiation?

Where A and B are affixes such that A attaches productively to stems affixed with B, Williams (1981: 249f) describes the relation between A and B as the **potentiation** of A by B.

Potentiation is an outward relation, an affix's enhancement of the productivity of a more peripheral affix.

1. What is potentiation?

As an example of potentiation, consider the suffix sequence *-iz-ation* appearing in nouns such as *pasteurization*.

The suffix *-ize* potentiates *-ation*, because it exhibits a measurable effect on the productivity of *-ation*.

1. What is potentiation?

Gaeta & Ricca's 2006 variable-corpus approach to the measure of productivity:

Given a subcorpus S containing some fixed number n of tokens exhibiting morphology M, the productivity of M is the ratio

$$\frac{\text{number of hapax legomena exhibiting M in S}}{n}$$

1. What is potentiation?

Corpus of Contemporary American English

(COCA; Davies 2008–)

[*450 million words*]

By the measure in (2), -*ation* is fairly low in productivity (1.23).

But -*ation* is apparently potentiated by -*ize*, since the productivity of -*ation* among bases ending in -*ize* is substantially higher (4.59).

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2. Inward relations of productivity enhancement

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But something else is also going on.

The productivity of bases ending in *-ize* is 3.78

and again, the productivity of *-ation* among bases ending in *-ize* is higher (4.59).

Thus, besides being potentiated by *-ize, -ation* itself enhances the productivity of *-ize*, exercising a kind of "inward potentiation" on it.

2. Inward relations of productivity enhancement

The heightened productivity of *-ize* when it is followed by *-ation* is not expressible as a positive restriction on the domain of the *-ize* rule's application; that is, it is not an instance of potentiation as this is represented in Aronoff's *un-* rule.

2. Inward relations of productivity enhancement

But it is desirable to find a single explanation for productivity enhancement that accounts both for outward relations of potentiation (e.g. the enhancement of *-ation*'s productivity by *-ize*) and for their converse (e.g. the inward enhancement of *-ize*'s productivity by *-ation*).

The desired explanation, I believe, depends on a notion of rule conflation.

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The desired explanation, I believe, depends on a notion of **rule conflation**.

3. Rule conflation

For present purposes, we may think of the conflation of rule A with rule B (represented here as $[A \, © \, B]$) as being, *in the default case*, the composition of A with B.

For example, the conflation of the   rule with the rule –

$$[\qquad \text{rule} \, © \qquad \text{rule}]$$

– is the result of applying the   rule to the result of applying the   rule:

$$[\qquad \text{rule} \, © \qquad \text{rule}](\qquad) =$$

3. Rule conflation

For present purposes, we may think of the conflation of rule A with rule B (represented here as $[A © B]$) as being, *in the default case*, the composition of A with B.

For example, the conflation of the *-ation* rule with the *-ize* rule –

$$[\text{*-ation* rule} © \text{*-ize* rule}]$$

– is, by default, the result of applying the *-ation* rule to the result of applying the *-ize* rule:

$$[\text{*-ation* rule} © \text{*-ize* rule}](\textit{Pasteur}) = \textit{pasteurization}$$

3. Rule conflation

If we assume a principle of rule conflation, then (a)–(c) are three distinct rules.

(a) *-ize* rule

(b) *-ation* rule

(c) [*-ation* rule © *-ize* rule]

In the default case, (c) is the composition of (b) with (a). But as an autonomous rule, (c) may come to deviate from this default value of simple composition.

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(a) *-ize* rule

(b) *-ation* rule

(c) [*-ation* rule © *-ize* rule]

In the case at hand, (c) has deviated from simple composition.

As we have just seen, it is more productive than both the *-ize* rule and the *-ation* rule.

3. Rule conflation

If we assume a principle of rule conflation, then (a)–(c) are three distinct rules.

(a) *-ize* rule

(b) *-ation* rule

(c) [*-ation* rule © *-ize* rule]

In the case at hand, (c) has deviated from simple composition.

In addition, it has a wider domain of application than the *-ize* rule.

3. Rule conflation

**Tokens of nouns in *-ization* in COCA for which forms
of the corresponding verb in *-ize* are absent from the corpus**

adjectivalization	1	*Bavarianization*	7	*cantonization*	8	*condo-ization*	1	*cyclization*	1
amateurization	4	*Beirutization*	1	*capillarization*	1	*condomization*	1	*Dagwoodization*	1
amorphization	4	*bipolarization*	5	*Carolinization*	1	*confessionalization*	4	*Daimlerization*	2
androgenization	3	*Bolivianization*	1	*carryization*	1	*continentalization*	1	*villagization*	15
Angelesization	3	*bosonization*	2	*centaurization*	1	*contractorization*	1	*vulgatization*	1
angelicization	1	*briberizations*	1	*chaptalization*	1	*corporalization*	1	*Wal-martization*	2
angelization	5	*Brusselization*	1	*Chileanization*	1	*corporativization*	1	*Walmartization*	3
Asianization	5	*buffetization*	1	*Christmasization*	1	*cosmopolitization*	1	*Washingtonization*	1
Aspenization	4	*Bulgarization*	2	*CNN-ization*	1	*cretinization*	2	*worldization*	1
Australianization	1	*bunkerization*	1	*coca-colaization*	1	*criticalization*	1	*wristonization*	1
automization	1	*Cajunization*	10	*coca-colonization*	4	*Cubanization*	1	*Zairianization*	9
Bahrainization	1	*California-ization*	1	*Colombianization*	2	*culturization*	1	*Zairization*	1
Balinization	2	*Californization*	1	*commodization*	1	*curarization*	1	*Zionization*	1
Bantustanization	2	*Cancunization*	1	*compromization*	1	*customerization*	2	*Zuckerization*	1

3. Rule conflation

Nouns in *-ization* with 10 or more tokens in COCA which outnumber the corresponding verb in *-ize* by at least 10 to 1

(N = *-ization* noun tokens; V = *-ize* verb tokens)

	N	N/(N+V)		N	N/(N+V)		N	N/(N+V)
self-actualization	213	0.995	*isomerization*	20	0.952	*Arabization*	25	0.926
self-realization	140	0.993	*hyalinization*	18	0.947	*decimalization*	12	0.923
civilization	10526	0.984	*salinization*	89	0.947	*geovisualization*	12	0.923
Finlandization	56	0.982	*re-epithelialization*	16	0.941	*microneutralization*	12	0.923
factorization	133	0.978	*self-dramatization*	16	0.941	*embolization*	117	0.921
self-categorization	40	0.976	*globalization*	4683	0.941	*principalization*	11	0.917
Islamization	173	0.972	*tabloidization*	15	0.938	*Talibanization*	22	0.917
desalinization	62	0.969	*barbarization*	13	0.929	*cross-fertilization*	87	0.916
neovascularization	27	0.964	*Kafkatization*	13	0.929	*McDonaldization*	10	0.909
Vietnamization	27	0.964	*renormalization*	64	0.928	*overcapitalization*	10	0.909
marketization	103	0.954						

3. Rule conflation

Postulating a principle of rule conflation is one way of executing the hypothesis that an affix (or a rule of affixation) can itself be morphologically complex.

This hypothesis is often taken for granted by descriptive grammarians, but it hasn't received much attention in morphological theory, where affixes tend to be seen as monomorphemic by definition.

Some exceptions: Bauer 1988, Bochner 1992, Raffelsiefen 1992, Luís & Spencer 2005

4. Independent motivation for rule conflation

But a range of additional phenomena motivate the postulation of a principle of rule conflation.

4.1 Bypassing useless intermediate derivatives

4.2 Formulaic affix sequences

4.3 Affix combinations expressing extra meaning

4.1 *Bypassing useless intermediate derivatives.*

As we have seen, COCA exhibits a large number of nominalizations in *-ization* for which no corresponding verb in *-ize* is attested.

This suggests that in at least some cases, the need for a nominalization in *-ization* outweighs the need for the corresponding verb in *-ize*—that comparatively speaking, the *-ize* verb is useless.

4.1 *Bypassing useless intermediate derivatives.*

Usefulness is a multifaceted concept. First, word X may be more useful than word Y with respect to its semantic content—that is, the denotation of X may be more important than that of Y.

4.1 *Bypassing useless intermediate derivatives.*

Cajunization vs *pasteurization*

The noun *pasteurization* appears 123 times in COCA, and forms of the verb *pasteurize* appear 122 times.

But while the noun *Cajunization* appears ten times, the verb *Cajunize* does not appear at all.

4.1 *Bypassing useless intermediate derivatives.*

Cajunization vs *pasteurization*

The noun *pasteurization* denotes the progress or completion of a well-defined process involving a set of necessary and sufficient steps; this process is what the verb *pasteurize* denotes.

But the meaning of *Cajunization* is different. Cajunization is the progress or outcome of the tendency to identify all white Louisianans of French ancestry as Cajun. The factors that lead to this outcome are vague and heterogenerous.

4.1 *Bypassing useless intermediate derivatives.*

Cajunization vs *pasteurization*

The verb *Cajunize* isn't ungrammatical, but it's much less useful than the noun *Cajunization.*

4.1 *Bypassing useless intermediate derivatives.*

A second way in which word X may be more useful than word Y is with respect to the lexicon, since word Y might be blocked by an existing lexical item while word X is not.

For instance, nominalizations in *-ic-ity* generally correspond to adjectives in *-ic* (*authenticity, elasticity, specificity, toxicity,* etc.) but *multiplicity* and *simplicity* are exceptions; this is presumably because **multiplic* and **simplic* are lexically blocked by the existence of *multiple* and *simple*.

Third, word X may be more useful than word Y because it better satisfies an output condition.

For instance, *Hermanator* (a blend of *Herman*—media personality Herman Cain—and *Terminator*) has six tokens in COCA, but no token of any form of the putative verb **Hermanate*. *Hermanator* works well as a blend of *Terminator*, but **Hermanate* does not.

Additional examples of *Terminator* blends from COCA

Nicknames	*Collectinator*	Arnold Schwarzegger, for collecting federal money for the state of California	6
	Glorinator	Gloria	3
	Businator	(Gary) Busey	2
	Ozzinator	Ozzie	2
	Furminator	(a cat's name)	1
	Herbinator	Herb	1
	Kerminator	Kermit (the frog)	1
	Sherminator	Sherman	1

Additional examples of *Terminator* blends from COCA

Devices	*claminator*	cooking device for clambakes	11
	whizzinator	prosthetic device that dispenses clean urine for drug tests	7
	insultinator	electronic device that generates insults	6
	Humminator	environmentally friendly Hummer owned by A. Schwarzenegger	1
	Marlinator	name suggested for the huge kinetic sculpture by Red Grooms at the Miami Marlins' new stadium	1
Misc.	*Punkinator*	craft beer made from pumpkins	1
	The Wizinator	title of an imaginary mash-up of the movies "The Terminator" and "The Wizard of Oz"	1

4.1 Bypassing useless intermediate derivatives.

The principle of rule conflation makes it possible to avoid assuming that nouns like *Cajunization*, *simplicity*, and *Hermanator* occupy derivational paradigms in which **Cajunize*, **simplic* and **Hermanate* have a kind of virtual existence as "missing links".

In each case, this principle makes it possible to assume that a conflated rule [B © A] defines derivatives that are more useful than those defined by rule A.

4.2 Formulaic affix sequences

4.2 *Formulaic affix sequences*

Experimental evidence shows that formulaic combinations of words are stored and accessed as wholes and are therefore processed more quickly than nonformulaic word combinations that are otherwise comparable (Wray 2002; Underwood et al. 2004; Conklin & Schmitt 2012).

Various factors contribute to formulaicity: formulaic word combinations
* are very frequent (*down the street, just what I wanted*),
* are idiomatic (*over the hill, sure as shooting*) or
* are simply the conventionally accepted way of expressing something (*please accept our condolences, take a walk*).

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4.2 *Formulaic affix sequences*

Research on formulaic language has mostly focused on formulaic combinations of words. But logically, combinations of affixes could also become formulaic (Frauenfelder & Schreuder 1992: 180).

4.2 Formulaic affix sequences

Durrant (2013) shows that in Turkish, certain affixes appear adjacently with very high frequency, and are therefore good candidates for formulaicity. For example, 99.74% of the tokens of the 3rd-person singular possessive suffix *-sIn* in his sample appeared in one of three combinations:

-dIk-	*-sIn*	[subordinator – 3sg possessive]
-mA	*-sIn*	[subordinator – 3sg possessive]
-yAcAK	*-sIn*	[subordinator – 3sg possessive]

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Moreover, one or another of these three combinations appeared in 20.51% of all of the verb-form tokens in the sample.

If frequency contributes to formulaicity, combinations of these sorts should become formulaic.

4.2 Formulaic affix sequences

Bilgin (2016) confirmed this experimentally.

In a word recognition task, Bilgin presented subjects with inflected nouns, some with high-frequency suffix sequences, and others with low-frequency suffix sequences, controlling for the relative frequency of noun stems, of stem +suffix sequence combinations, and of the individual suffixes.
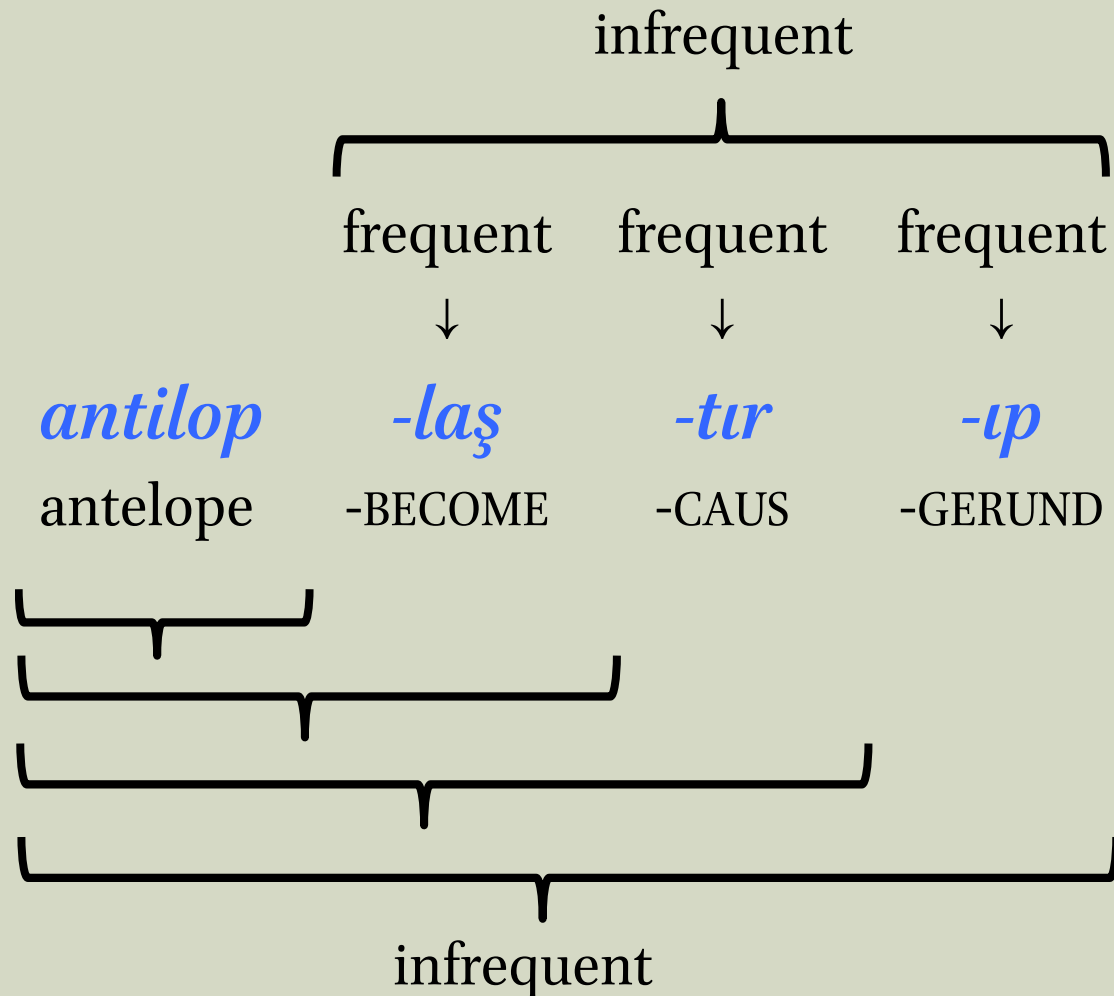
4.2 Formulaic affix sequences

'caused to become a rhino'

frequent

frequent   frequent   frequent

↓   ↓   ↓

| *gergedan* | *-laş* | *-tır* | *-dı* |

rhino   -BECOME   -CAUS   -PAST

infrequent
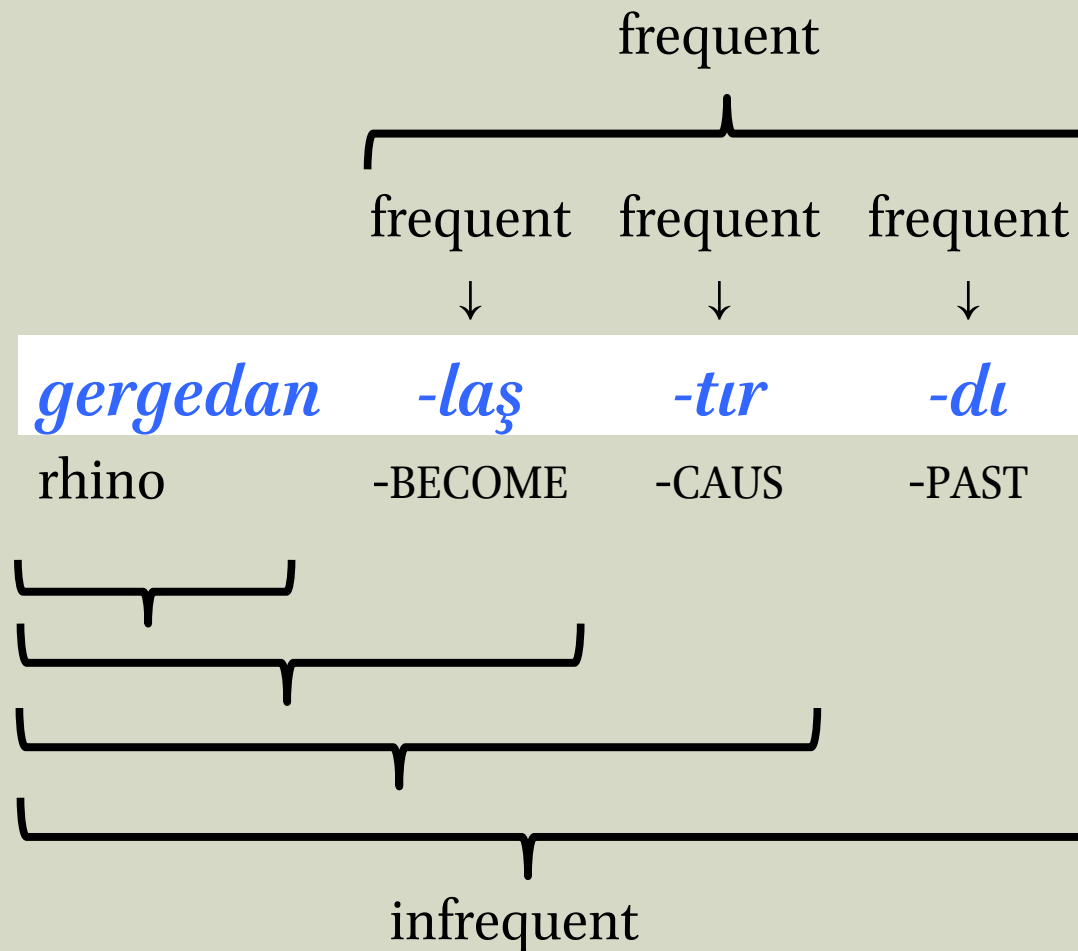
'having caused to become an antelope'

infrequent

frequent	frequent	frequent
↓	↓	↓

antilop   *-laş*   *-tır*   *-ıp*

antelope   -BECOME   -CAUS   -GERUND

infrequent

4.2 *Formulaic affix sequences*

Subjects' response times were faster for high-frequency suffix sequences than for low-frequency sequences.

This suggests that the high-frequency sequences are processed as stored units rather than by the successive retrieval of individual suffixes.

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Rule conflation is precisely the principle that allows high-frequency affix combinations to be stored and accessed as units.

4.3 *Affix combinations expressing extra meaning*

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Finite forms of Bulgarian KRAD 'steal'

	Present	Preterite	
		Imperfect	Aorist
1sg	*krad-ə́*	*krad-'á-x*	*krád-o-x*
2sg	*krad-é-š*	*krad-é-š-e*	*krád-e*
3sg	*krad-é*		
1pl	*krad-é-m*	*krad-'á-x-me*	*krád-o-x-me*
2pl	*krad-é-te*	*krad-'á-x-te*	*krád-o-x-te*
3pl	*krad-ə́t*	*krad-'á-x-a*	*krád-o-x-a*

Finite forms of Bulgarian KRAD 'steal'

	Present	Preterite	
			orist
1sg	*krad*		*-o-x*
2sg	*krad-é-š*	} *krad-é-š-e*	*krád-e*
3sg	*krad-é*		
1pl	*krad-é-m*	*krad-'á-x-me*	*krád-o-x-me*
2pl	*krad-é-te*	*krad-'á-x-te*	*krád-o-x-te*
3pl	*krad-ət*	*krad-'á-x-a*	*krád-o-x-a*

"significative absence"

4.3 *Affix combinations expressing extra meaning*

Block A

A1.	{pres} :	$X \rightarrow X\acute{e}$
A2.	{impf} :	$X \rightarrow X\acute{A}$
A3.	{aor} :	$X \rightarrow \acute{X}o$

Block B

B1.	{pret} :	$X \rightarrow Xx$
B2.	{pret aor –1 sg} :	$X \rightarrow Xe$

Block C

C1.	{pres 1 sg} :	$X \rightarrow X\partial$
C2.	{pres 2 sg} :	$X \rightarrow X\check{s}$
C3.	{–1 sg} :	$X \rightarrow Xe$
C4.	{pres 1 pl} :	$X \rightarrow Xm$
C5.	{1 pl} :	$X \rightarrow Xme$
C6.	{2 pl} :	$X \rightarrow Xte$
C7.	{pres 3 pl} :	$X \rightarrow X\partial t$
C8.	{3 pl} :	$X \rightarrow Xa$

Identity Function Default (IFD)

{} : $X \rightarrow X$

(12) Morphophonology

$V_1 V_2 \rightarrow V_2$; stress on V_1 transfers to V_2.

$A \rightarrow e$ before palatals; otherwise $A \rightarrow \text{'}a$.

$x \rightarrow \check{s}$ before front vowels.

Conflation rule

Where R_N is the narrowest rule in Block N realizing the morphosyntactic property set σ, then $[R_C \copyright [R_B \copyright R_A]]$ is the rule of exponence realizing σ.

The conflated rules for aorist forms

Conflated rule	Equivalent formulation
$[\textbf{IFD} © [\textbf{B1} © \textbf{A3}]]$	$\{\text{pret aor 1 sg}\} : X \rightarrow \acute{X}ox$
$[\textbf{C3} © [\textbf{B2} © \textbf{A3}]]$	$\{\text{pret aor 2 sg}\} : X \rightarrow \acute{X}e$
$[\textbf{C3} © [\textbf{B2} © \textbf{A3}]]$	$\{\text{pret aor 3 sg}\} : X \rightarrow \acute{X}e$
$[\textbf{C5} © [\textbf{B1} © \textbf{A3}]]$	$\{\text{pret aor 1 pl}\}\rangle : X \rightarrow \acute{X}oxme$
$[\textbf{C6} © [\textbf{B1} © \textbf{A3}]]$	$\{\text{pret aor 2 pl}\}\rangle : X \rightarrow \acute{X}oxte$
$[\textbf{C8} © [\textbf{B1} © \textbf{A3}]]$	$\{\text{pret aor 3 pl}\}\rangle : X \rightarrow \acute{X}oxa$

4.3 *Affix combinations expressing extra meaning*

The definition of the aorist forms of KRAD 'steal' afforded by rule conflation

Conflated rule)	Cell to be realized	Realization
$[\mathbf{IFD} © [\mathbf{B1} © \mathbf{A3}]]$	$\langle krad, \{\text{pret aor 1 sg}\}\rangle$	$\langle krádox, \{\text{pret aor 1 sg}\}\rangle$
$[\mathbf{C3} © [\mathbf{B2} © \mathbf{A3}]]$	$\langle krad, \{\text{pret aor 2 sg}\}\rangle$	$\langle kráde, \{\text{pret aor 2 sg}\}\rangle$
$[\mathbf{C3} © [\mathbf{B2} © \mathbf{A3}]]$	$\langle krad, \{\text{pret aor 3 sg}\}\rangle$	$\langle kráde, \{\text{pret aor 3 sg}\}\rangle$
$[\mathbf{C5} © [\mathbf{B1} © \mathbf{A3}]]$	$\langle krad, \{\text{pret aor 1 pl}\}\rangle$	$\langle krádoxme, \{\text{pret aor 1 pl}\}\rangle$
$[\mathbf{C6} © [\mathbf{B1} © \mathbf{A3}]]$	$\langle krad, \{\text{pret aor 2 pl}\}\rangle$	$\langle krádoxte, \{\text{pret aor 2 pl}\}\rangle$
$[\mathbf{C8} © [\mathbf{B1} © \mathbf{A3}]]$	$\langle krad, \{\text{pret aor 3 pl}\}\rangle$	$\langle krádoxa, \{\text{pret aor 3 pl}\}\rangle$

5. Some predictions

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Prediction 1   *There may be rules whose only manifestation is as part of a conflated rule.*

Prediction 2   *There may be conflated rules that are paradigmatically opposed to simple rules.*

Prediction 3   *A simple rule's domain of application may be extended by virtue of its perceived participation in the definition of a conflated rule*

Prediction 1 – There may be rules whose only manifestation is as part of a conflated rule

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In her new book *Multiple Exponence*, Harris (2017) draws a distinction between four frequent types of multiple exponence.

One of these involves a distinction between *dependent affixes* and *carrier affixes*, such that the appearance of a dependent affix is contingent on the appearance of an adjacent carrier affix.

Example from Limbu [Kiranti; Nepal]
(data from van Driem 1987)

Limbu verb morphology involves a complex system of agreement that encodes both subject and object. At issue here are two suffixes:

-ŋ   1st sg agent concord
-m   non3rd plural agent concord

Prediction 1 – There may be rules whose only manifestation is as part of a conflated rule

Example from Limbu [Kiranti; Nepal]
(data from van Driem 1987)

These suffixes are special in two ways.

- They may appear in two different positions (positions 5 and 9, in van Driem's numbering); and
- they appear in these positions only if a carrier affix appears in the preceding position (positions 4 and 8).

The agent suffixes *-ŋ* and *-m* in the positive nonpreterite paradigm of the Limbu verb HUʔMAʔ 'teach'

agent → patient	pf1 a	pf1 b	stem	1	4	5	7	8	9	10
1s → 2s			*huʔ*	*nɛ*						
1s → 2d			*huʔ*	*nɛ*				*ci*	*ŋ*	
1s → 2p			*huʔ*	*n(ɛ)*				*i*	*ŋ*	
1s → 3s			*huʔr*		*u*	*ŋ*				
1s → 3ns			*huʔr*		*u*	*ŋ*		*si*	*ŋ*	
1pi → 3s	*a*		*huʔr*		*u*	*m*				
1pi → 3ns	*a*		*huʔr*		*u*	*m*		*si*	*m*	
1pe → 2			*huʔ*	*nɛ*			*ci*			*ge*
1pe → 3s			*huʔr*		*u*	*m*				*be*
1pe → 3ns			*huʔr*		*u*	*m*		*si*	*m*	*be*
2 → 1	*a*	*gɛ*	*huʔ*							
2p → 3s		*kɛ*	*huʔr*		*u*	*m*				
2p → 3ns		*kɛ*	*huʔr*		*u*	*m*		*si*	*m*	

The agent suffixes *-ŋ* and *-m* in the positive nonpreterite paradigm of the Limbu verb HU?MA? 'teach'

agent → patient	pf1 a	b	stem	1	4	5	7	8	9	10
1s → 2s			hu?	nɛ						
1s → 2d			hu?	nɛ				ci	ŋ	
1s → 2p			hu?	n(ɛ)				i	ŋ	
1s → 3s			hu?r		u	ŋ				
1s → 3ns			hu?r		u	ŋ		si	ŋ	
1pi → 3s	a		hu?r		u	m				
1pi → 3ns	a		hu?r		u	m		si	m	
1pe → 2			hu?	nɛ			ci			ge
1pe → 3s			hu?r		u	m				be
1pe → 3ns			hu?r		u	m		si	m	be
2 → 1	a	gɛ	hu?							
2p → 3s		kɛ	hu?r		u	m				
2p → 3ns		kɛ	hu?r		u	m		si	m	

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The agent suffixes *-ŋ* and *-m* in the positive nonpreterite paradigm of the Limbu verb HUʔMAʔ 'teach'

agent → patient	pfı a	pfı b	stem	carrier 1	4	5	7	8	9	10
1s → 2s			*hu?*	*nε*						
1s → 2d			*hu?*	*nε*				*ci*	*ŋ*	
1s → 2p			*hu?*	*n(ε)*				*i*	*ŋ*	
1s → 3s			*hu?r*		*u*	*ŋ*				
1s → 3ns			*hu?r*		*u*	*ŋ*		*si*	*ŋ*	
1pi → 3s	*a*		*hu?r*		*u*	*m*				
1pi → 3ns	*a*		*hu?r*		*u*	*m*		*si*	*m*	
1pe → 2			*hu?*	*nε*			*ci*			*ge*
1pe → 3s			*hu?r*		*u*	*m*				*be*
1pe → 3ns			*hu?r*		*u*	*m*		*si*	*m*	*be*
2 → 1	*a*	*gε*	*hu?*							
2p → 3s		*kε*	*hu?r*		*u*	*m*				
2p → 3ns		*kε*	*hu?r*		*u*	*m*		*si*	*m*	

The agent suffixes *-ŋ* and *-m* in the positive nonpreterite paradigm of the Limbu verb HU?MA? 'teach'

agent → patient	pf1 a	b	stem	sf 1	4	5	7	8	9	10
1s → 2s			hu?	nɛ						
1s → 2d			hu?	nɛ				ci	ŋ	
1s → 2p			hu?	n(ɛ)				i	ŋ	
1s → 3s			hu?r		u	ŋ				
1s → 3ns			hu?r		u	ŋ		si	ŋ	
1pi → 3s	a		hu?r		u	m				
1pi → 3ns	a		hu?r		u	m		si	m	
1pe → 2			hu?	nɛ			ci			ge
1pe → 3s			hu?r		u	m				be
1pe → 3ns			hu?r		u	m		si	m	be
2 → 1	a	gɛ	hu?							
2p → 3s		kɛ	hu?r		u	m				
2p → 3ns		kɛ	hu?r		u	m		si	m	

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The agent suffixes *-ŋ* and *-m* in the positive nonpreterite paradigm of the Limbu verb ʜᴜʔᴍᴀʔ 'teach'

agent → patient	pfı a	pfı b	stem	sf 1	sf 4	sf 5	sf 7	sf 8	sf 9	sf 10
1s → 2s			*hu?*	*nɛ*						
1s → 2d			*hu?*	*nɛ*				*ci*	*ŋ*	
1s → 2p			*hu?*	*n(ɛ)*				*i*	*ŋ*	
1s → 3s			*hu?r*		*u*	*ŋ*				
1s → 3ns			*hu?r*		*u*	*ŋ*		*si*	*ŋ*	
1pi → 3s	*a*		*hu?r*		*u*	*m*				
1pi → 3ns	*a*		*hu?r*		*u*	*m*		*si*	*m*	
1pe → 2			*hu?*	*nɛ*			*ci*			*ge*
1pe → 3s			*hu?r*		*u*	*m*				*be*
1pe → 3ns			*hu?r*		*u*	*m*		*si*	*m*	*be*
2 → 1	*a*	*gɛ*	*hu?*							
2p → 3s		*kɛ*	*hu?r*		*u*	*m*				
2p → 3ns		*kɛ*	*hu?r*		*u*	*m*		*si*	*m*	

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The agent suffixes *-ŋ* and *-m* in the positive nonpreterite paradigm of the Limbu verb HUʔMAʔ 'teach'

agent → patient	pfɪ a	b	stem	1	4	5	7	8	9	10
1s → 2s			*huʔ*	*nɛ*						
1s → 2d			*huʔ*	*nɛ*				*ci*	*ŋ*	
1s → 2p			*huʔ*	*n(ɛ)*				*i*	*ŋ*	
1s → 3s			*huʔr*		*u*	*ŋ*				
1s → 3ns			*huʔr*		*u*	*ŋ*		*si*	*ŋ*	
1pi → 3s	*a*		*huʔr*		*u*	*m*				
1pi → 3ns	*a*		*huʔr*		*u*	*m*		*si*	*m*	
1pe → 2			*huʔ*	*nɛ*			*ci*			*ge*
1pe → 3s			*huʔr*		*u*	*m*				*be*
1pe → 3ns			*huʔr*		*u*	*m*		*si*	*m*	*be*
2 → 1	*a*	*gɛ*	*huʔ*							
2p → 3s		*kɛ*	*huʔr*		*u*	*m*				
2p → 3ns		*kɛ*	*huʔr*		*u*	*m*		*si*	*m*	

The agent suffixes -*ŋ* and -*m* in the positive nonpreterite paradigm of the Limbu verb HU?MA? 'teach'

agent → patient	pf₁ a	pf₁ b	stem	sf 1	sf 4	sf 5	sf 7	sf 8	sf 9	sf 10
1s → 2s			*hu?*	*nɛ*						
1s → 2d			*hu?*	*nɛ*				*ci*	*ŋ*	
1s → 2p			*hu?*	*n(ɛ)*				*i*	*ŋ*	
1s → 3s			*hu?r*		*u*	*ŋ*				
1s → 3ns			*hu?r*		*u*	*ŋ*		*si*	*ŋ*	
1pi → 3s	*a*		*hu?r*		*u*	*m*				
1pi → 3ns	*a*		*hu?r*		*u*	*m*		*si*	*m*	
1pe → 2			*hu?*	*nɛ*			*ci*			*ge*
1pe → 3s			*hu?r*		*u*	*m*				*be*
1pe → 3ns			*hu?r*		*u*	*m*		*si*	*m*	*be*
2 → 1	*a*	*gɛ*	*hu?*							
2p → 3s		*kɛ*	*hu?r*		*u*	*m*				
2p → 3ns		*kɛ*	*hu?r*		*u*	*m*		*si*	*m*	

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The agent suffixes *-ŋ* and *-m* in the positive nonpreterite paradigm of the Limbu verb HUʔMAʔ 'teach'

agent → patient	pf a	pf b	stem	sf 1	4	5	7	8	9	10
1s → 2s			huʔ	nɛ						
1s → 2d			huʔ	nɛ					ci	*ŋ*
1s → 2p			huʔ	n(ɛ)					i	*ŋ*
1s → 3s			huʔr	u	*ŋ*					

The relation between a dependent rule and a carrier rule is that of conflation.

In such cases, the dependent rule's *only* manifestation is as part of a conflation.

| 2p → 3s | kɛ | | huʔr | u | *m* | | | | | |
| 2p → 3ns | kɛ | | huʔr | u | *m* | | | | si | *m* |

Prediction 2 – There may be conflated rules that are paradigmatically opposed to simple rules

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Negative personal forms of Swahili KUSOMA 'read' in three tenses ('I am not reading it', etc.)

	Present					Past					Future				
	IV	III	II	I	STEM	IV	III	II	I	STEM	IV	III	II	I	STEM
1sg	si-		na-	ki-	soma	si-		li-	ki-	soma	si-		ta-	ki-	soma
	*ha-	ni-	na-	ki-	soma	*ha-	ni-	li-	ki-	soma	*ha-	ni-	ta-	ki-	soma
2sg	ha-	u-	na-	ki-	soma	ha-	u-	li-	ki-	soma	ha-	u-	ta-	ki-	soma
3sg	ha-	a-	na-	ki-	soma	ha-	a-	li-	ki-	soma	ha-	a-	ta-	ki-	soma
1pl	ha-	tu-	na-	ki-	soma	ha-	tu-	ku-	ki-	soma	ha-	tu-	ta-	ki-	soma
2pl	ha-	m-	na-	ki-	soma	ha-	m-	ku-	ki-	soma	ha-	m-	ta-	ki-	soma
3pl	ha-	wa-	na-	ki-	soma	ha-	wa-	ku-	ki-	soma	ha-	wa-	ta-	ki-	soma

Prediction 2 – There may be conflated rules that are paradigmatically opposed to simple rules

Negative personal forms of Swahili KUSOMA 'read' in three tenses ('I am not reading it', etc.)

	Present					Past					Future				
	IV	III	II	I	STEM	IV	III	II	I	STEM	IV	III	II	I	STEM
		si-	na-	ki-	soma		si-	li-	ki-	soma		si-	ta-	ki-	soma
1sg	*ha-	ni-	na-	ki-	soma	*ha-	ni-	li-	ki-	soma	*ha-	ni-	ta-	ki-	soma
2sg	ha-	u-	na-	ki-	soma	ha-	u-	li-	ki-	soma	ha-	u-	ta-	ki-	soma
3sg	ha-	a-	na-	ki-	soma	ha-	a-	li-	ki-	soma	ha-	a-	ta-	ki-	soma
1pl	ha-	tu-	na-	ki-	soma	ha-	tu-	ku-	ki-	soma	ha-	tu-	ta-	ki-	soma
2pl	ha-	m-	na-	ki-	soma	ha-	m-	ku-	ki-	soma	ha-	m-	ta-	ki-	soma
3pl	ha-	wa-	na-	ki-	soma	ha-	wa-	ku-	ki-	soma	ha-	wa-	ta-	ki-	soma

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Prediction 2 – There may be conflated rules that are paradigmatically opposed to simple rules

Negative personal forms of Swahili KUSOMA 'read' in three tenses ('I am not reading it', etc.)

	Present					Past					Future				
	IV	III	II	I	STEM	IV	III	II	I	STEM	IV	III	II	I	STEM
1sg	si-		na-	ki-	soma	si-		li-	ki-	soma	si-		ta-	ki-	soma
	*ha-	ni-	na-	ki-	soma	*ha-	ni-	li-	ki-	soma	*ha-	ni-	ta-	ki-	soma
2sg	ha-	u-	na-	ki-	soma	ha-	u-	li-	ki-	soma	ha-	u-	ta-	ki-	soma
3sg	ha-	a-	na-	ki-	soma	ha-	a-	li-	ki-	soma	ha-	a-	ta-	ki-	soma
1pl	ha-	tu-	na-	ki-	soma	ha-	tu-	ku-	ki-	soma	ha-	tu-	ta-	ki-	soma
2pl	ha-	m-	na-	ki-	soma	ha-	m-	ku-	ki-	soma	ha-	m-	ta-	ki-	soma
3pl	ha-	wa-	na-	ki-	soma	ha-	wa-	ku-	ki-	soma	ha-	wa-	ta-	ki-	soma

The history of *-ion* and *-ation*

Latin nominalization:

perfect passive participial stem + *-iō(n)* = third-declension noun

Declension of Latin *incīsiō* 'incision'

	Singular	Plural
Nom	*incīsiō*	*incīsiōnēs*
Gen	*incīsiōnis*	*incīsiōnum*
Dat	*incīsiōnī*	*incīsiōnibus*
Acc	*incīsiōnem*	*incīsiōnēs*
Abl	*incīsiōne*	*incīsiōnibus*
Voc	*incīsiō*	*incīsiōnēs*

Declension of Latin *aliēnātiō* 'separation'

	Singular	Plural
Nom	*aliēnātiō*	*aliēnātiōnēs*
Gen	*aliēnātiōnis*	*aliēnātiōnum*
Dat	*aliēnātiōnī*	*aliēnātiōnibus*
Acc	*aliēnātiōnem*	*aliēnātiōnēs*
Abl	*aliēnātiōne*	*aliēnātiōnibus*
Voc	*aliēnātiō*	*aliēnātiōnēs*

The history of *-ate*

Many Latin verbs were first borrowed into English in the perfect passive participial form.

This subsequently served as the basis for their integration into the system of English verb morphology (Marchand 1966: 199ff). Every form in the paradigms of English *incise* and *alienate* reflect this participial origin:

incīs- :   perfect passive participial stem of *incīdere* 'to cut open'
aliēnāt- : perfect passive participial stem of *aliēnāre* 'to transfer'

Verbs from the Latin first conjugation therefore turn up in English with a final *-ate.* This was subsequently reanalyzed as a verb-deriving suffix.

The history of *-ate*

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Verbs from the Latin first conjugation therefore turn up in English with a final *-ate*. This was subsequently reanalyzed as a verb-deriving suffix. 75

Prediction 3 — A simple rule's domain may be extended by virtue of its perceived participation in the definition of a conflated rule

Because verbs in *-ate* often existed alongside nouns in *-ation* —originally the nominalizations of first-conjugation verbs—the suffix *-ation* in these nouns was in turn reanalyzed as involving the verb-forming suffix *-ate* followed by the nominalizing suffix *-ion*.

Noun or Adjective	*-ate* verb	*-ion* noun
active	activ-ate	activ-at-ion
alien	alien-ate	alien-at-ion
assassin	assassin-ate	assassin-at-ion
captive	captiv-ate	captiv-at-ion
liquid	liquid-ate	liquid-at-ion
motive	motiv-ate	motiv-at-ion
note	not-ate	not-at-ion
oxygen	oxygen-ate	oxygen-at-ion
pulse	puls-ate	puls-at-ion
saliva	saliv-ate	saliv-at-ion
sublime	sublim-ate	sublim-at-ion
ulcer	ulcer-ate	ulcer-at-ion
vaccine	vaccin-ate	vaccin-at-ion
valid	valid-ate	valid-at-ion

Sometimes, however, the nominalization was borrowed without the corresponding verb; in many such cases, the nominalization in *-ation*, seen as arising by rule conflation, served as the basis for the back-formation of the corresponding verb in *-ate*.

Noun in *-ation*	1st attestation	Verb in *-ate*	1st attestation
constipation	c1400	*constipate*	1541
cremation	1623	*cremate*	1874
dedication	1382	*dedicate*	1530
equation	1393	*equate*	1530
granulation	1617	*granulate*	1666
incarnation	1297	*incarnate*	1533
mitigation	1382	*mitigate*	1425
mutation	1398	*mutate*	1796
oration	c1440	*orate*	c1600
pagination	1794	*paginate*	1858
termination	1395	*terminate*	1425

6. Conclusion

Potentiation: ? a property of rules of derivation ?

Potentiation is but one manifestation of a very general phenomenon in morphology, that of rule conflation, whose effects are manifested
- formally, in the definition of inflection as well as derivation,
- psycholinguistically, in the processing of affix sequences, and
- historically, in the incidence of processes such as back-formation.

Rule conflation in effect makes it possible to bridge the gap between constructive and abstractive approaches to morphology.

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Thank you!