

Spreading like wildfire: Morphological variation and the dynamics of the Great English Verb Regularization

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Overview of talk

- Part I: English verb inflection past and present
 - A brief introduction
- Part II: The Great Regularization
- Part III: Late-modern trends
- Part IV: "Wildfire" – the dynamics of large-scale regularization

Key points of talk (I)

The large-scale regularization of originally strong verbs was a historical event that took place in late Middle and Early Modern English...

NOT a constant tendency throughout the history of the language.

Key points of talk (II)

The metaphor of a "wildfire" (or epidemic) – that

- (1) feeds on itself for a time, but
- (2) eventually runs its course and ends

captures the way this kind of regularization spreads through the lexicon – with regular-irregular variation playing a crucial role.

Part I:
English verb inflection
past and present:
A brief introduction

Regular vs. Irregular

Vast majority of verbs today are inflectionally "regular": form past tense and participle with (orthographic) *-(e)d* suffix: **walk–walked**, etc.

A few dozen "irregular" verbs form past tense and participle in a variety of other ways, e.g.:

drive–drove–driven; take–took–taken...

sing–sang–sung; come–came–come...

set–set; beat–beat–beaten...

leave–left; keep–kept; send–sent; say–said...

Strong vs. weak

Many of today's irregular verbs descend from Germanic "**strong**" patterns – forming past tense with root-vowel change (**ablaut**) but no tense suffix; participle (originally always) with *-en* suffix (with or without a further root vowel change): *drive–dro**ve**–driv**en***, etc.

-(e)*d* and -*t* suffixes reflect Germanic "**weak**" pattern – which originally never entailed any root-vowel change.

Irregular weak verbs

Verbs with orthographic *-t* suffix – and a few with *-d* are "weak irregulars"; some have developed root-vowel alternations:

keep–kept; mean–meant; leave–left...

tell–told; say–said...

teach–taught; seek–sought...

In a few cases, *-t* replaces root-final *-d*:

send–sent; lend–lent...

"No-change" verbs

Verbs whose past tense is identical to their present all end in *-t* or *-d*; historically they reflect a mix of old strong patterns:

let—let—let; beat—beat—beat(en)

and old weak patterns:

set—set—set; rid—rid—rid; put—put—put; etc.

"Vowel-shortening" verbs

Another class with roots ending in *-t* or *-d* that also reflects a historical mix of old strong:

slide—slid; bite—bit(—bitten); shoot—shot

and weak patterns:

hide—hid(—hidden); feed—fed

Participles in -(e)n

The *-n* suffix for past participles reflects the old strong pattern but has developed a degree of productivity that is independent of other strong-vs.-weak issues:

*mow—mowed—mown**n*; *shave—shaved—shaven**n*

*hide—hidden**n*; *show—showed—shown**n*

Part II:

The Great Regularization

Beginning mainly in the 14th c. regular, weak past tense and participle variants start appearing for almost all originally strong verbs.

Why at this time?...

Morphological change as a reaction to non-morphological change

There had been only a handful of "irregular" verbs in Old English.

The inflectional properties of almost all OE strong and weak verbs were **predictable** from the phonological shape of the infinitive (or of most other present-tense forms).

This predictability progressively **breaks down** – due mainly to regular sound changes – over the course of the 11th, 12th, and 13th centuries.

Of the ~293 basic strong verbs of OE

- 102 have been lost with no sign of regularization
- 65 are still (more or less) entirely strong today
- 13 show some kind of strong–weak variation in PDE
- 15 have become irregular weak verbs
- At least 23 have merged with an originally weak verb
- 74 have regularized (17 of which were later lost).

For **62** of the 74 Old English strong verbs that have regularized, weak forms are first attested between 1300 and 1450.

Seven additional (more or less low-frequency) verbs come on board 1481–1589.

Strong–weak variation is widespread in the 15th and 16th centuries – among the verbs that would regularize, but also among the 78 verbs that have remained (partly or entirely) strong in PDE.

This variation is largely resolved – one way or the other – in later Early Modern English.

JOHANNIS WALLIS,
SS. Theol. Doctoris, & Geometriæ
Professoris Saviliani in Celeberrima
Academia
OXONIENSIS,
GRAMMATICA

LINGUAE ANGLICANAE:

Item,

Tractatus Grammatico-Physicus
de LOQUELA
siue SONORUM FORMATIONE.

Cui subjungitur

JOHANNIS PODENSTEINER
CLAVIS

Linguae Anglicanae:

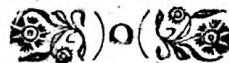
juxta cum

GUILIELMI PERKINS

Tractatu Anglico

De

FUNDAMENTO RELIGIO-
NIS CHRISTIANÆ.



Anno MDC LXXXIIX.

Suntibus Vidua GOTTFRIED SCHULTZEN,
Bibliopolæ Hamburgensis.

sudo, *to sit* sedeo, *to quit* libero, *to smite* percutio, *to write* scribo, *to bite* mordeo, *to hit* percutio, *to meet* occurro, *to shoot* ex machina projicio. Item *lent*, *rent*, *sent*, *girt*, &c. (*pro lend'd*, *send'd* &c. vel *lendt*, *sendt*, &c. a verbis *to lend* mutuò *do*, *to send* mitto, *to rend* lacero, *to gird* cingo.

Verba autem hanc Anomaliam seu contractionem passa, admittunt ut plurimum etiam formam regularem, non minùs eleganter quam hanc contractam; ut *placed*, *fished*, *beleaved*, *bereaved*, *girded* &c. vel *plac'd*, *fish'd* &c. Nisi fortassis cacophonia nonnunquam impediatur syncopen passa, (ut *gird'd*) aut etiam (in Verbis frequentissimi usus) celeritas pronunciandi contractiorem formam in quibusdam ut plurimum suadeat; unde *kept*, *wept*, fere semper dicimus; *keeped*, *weeped*, rariùs.

Anomalia secunda etiam frequens est, sed solummodò Participium Passivum spectat: Nempe Participium Passivum olim sæpius formabatur in *en*: Cujusmodi satis multa adhuc retinemus, præsertim ubi Præteritum Imperfectum insignem aliquam anomaliam patitur. (Atque hæc

hæc quidem Altera Participii
Formatio, potius quam Ano-
malia, non incommode dici po-
test.)

Ut *been, taken, given, slay'n, know'n, &c.*
a Verbis *to be esse, to take accipio, to give do, to*
slay occido, to know cognosco.

Et quidem nonnunquam post Præteriti Im-
perfecti & Participii Passivi communem sive
contractionem sive anomaliam, etiam hæc
Participii Passivi peculiaris anomaliam acce-
dit. Scilicet tam *written, bitten, eaten,*
beaten, hidden, chidden, shotten, rotten,
chosen, broken, &c. quam *writt, bitt, eat,*
beat, hidd, chidd, shott, rott, chose,
brake, &c. in Participio Passivo (at non i-
tem in Præterito Imperfecto) promiscuè ef-
feruntur; a verbis *to write scribo, to bite mor-*
deo, to eat edo, to beat verbero, to hide abscon-
do, to chide objurgo, to shoot projicio, to rot pu-
treſco, to choose eligo, to break frango; aliâ-
que ejusmodi multa.

Item promiscuè formantur Participia
sow'n, shew'n, hew'n, mow'n, loaden, laden;
atque *sow'd, shew'd, hew'd, mow'd, loaded,*
laded; a Verbis to sow fero, to shew
ostendo, to hew dolo, to mow meto;
to load vel lade, onero. Aliâque forsân ali-
quot similia.

alia, sed rarius. Quædam in Participio Passivo assumunt etiam *en*, ut *stricken*, *drunken*, *bounden*. Sed & utrobique forma analogâ fere in omnibus retinetur, ut *spinned*, *wimmed*, &c.

2. *Fight*, *pugno*, *teach*, *doceo*, *reach*, *extendo*, *seek*, *quæro*, *beseech*, *oro*, *catch*, *capio*, *buy*, *emo*, *bring*, *affero*, *think*, *cogito*, *work*, *operor*: faciunt *fought*, *taught*, *raught*, *sought*, *besought*, *caught*, *bought*, *brought*, *thought*, *Wrought*. Sed & ex his non pauca analogiam retinent, ut *taached*, *reached*, *beseeched*, *catchet*, *Worked*, &c.

3. *Take*, *capio*, *shake*, *quatio*, *forsake*, *desero*, *Wake*, (*awake*) *evigilo*, *stand*, (*olim stæd*) *sto*, *break*, *frango*, *speak*, *loquor*, *bear*, *fero*, *pario*, *shear*, *tondeo*, *swear*, *juro*, *tear*, *lacero*, *Wear*, *induo*, *tero*, *Weave*, *texo*, *cleave*, *hæreo*, *cleave* (*olim clive*) *findo*, *strive*, *contendo*, *thrive*, *ditesco*, *drive*, *pello*, *shine*, *splendo*, *rise*, (*arise*) *furgo*, *smite*, *percutio*, *write*, *scribo*, *bide*, (*abide*) *maneo*, *ride*, *equito*, *choose*, (*chuse*) *eligo*, *tread*, *conculco*, *get*, *acquiror*, *beget*, *gigno*, *forget*, *obliviſcor*, *ſectæ*, *coquo*: faciunt utrobique *took*, *shook*, *forſook*, *Woke*, *awoke*, *ſtood*, *broke*, *ſpoke*, *bore*, *ſhore*, *ſware*, *tore*, *Wore*, *clæve*, *ſirrove*, *throve*, *drove*, *ſhons*, *roſe*, *arife*, *ſmôte*, *Wrote*, *bode*, *abode*, *rode*, *choſe*, *trodd*, *gott*, *begott*, *forgot*, *ſod*. Sed & utrobique dicimus etiam

H 3 thrive,

thrive, rise, smitt, writt, abidd, ridd. In Præterito Imperfecto quædam etiam formantur per *a* ut brake, spake, bare, share, sware, tare, Ware, clave, gat, begat, forgat, & fortasse quædam alia sed rarius. In Participio Passivo formantur eorum non pauca etiam per *en*; ut taken, shaken, forsaken, brôken, spoken, born, (born) shorn, sworn, torn, worn, woven, cloven, thriven, driven, risen, smitten, written, ridden, chosen, tradden, gotten, begotten, forgotten, sodden. Multa etiam utrobique retinent analogiam, ut Waked, awaked, beared, sheared, weared, cleared, thrived, abided, choosed, seethed, &c.

4. Give, do, bid, iubeo, sit, sedeo, faciunt in Præterito Imperfecto gave, bade, fate; In Participio Passivo, given, bidden, sitten. Sed & utrobique bidd, sitt. Atque huc referenda sunt multa ex primâ & tertiâ classe, quæ formant Præteritum Imperfectum etiam in *a*.

5. Draw, traho, know scio, snow nino, grow cresco, throw jacio, blow flo, crow cano, (instar Galli) fly volare, slay occido, see video, ly jaceo, faciunt Præterita Imperfecta drew, knew, snow, grew, threw, blew, crew, flew, slew, saw, lay, Participia Passiva per *en*, draw'n, know'n, snow'n, grow'n, throw'n, blow'n, crow'n, flyen (flow'a) slay'n, seen, ly'n, (lay'n). Sed & utrobique draw'd, snow'd, throw'd, blow'd, crow'd. At a flee fugio fit fled. A go

Part III:

Late-modern trends

A widespread misconception primarily among scholars who are not specialists in the history of English:

Regularization of originally irregular verbs is assumed to be a **constant tendency** throughout the history of English.

An extreme example: Lieberman et. al. 2007

"the half-life of irregular verbs is proportional to the square root of their frequency. [...] Irregular verbs that occur with a frequency between 10^{-6} and 10^{-5} have a half-life of about 300 years, whereas those with a frequency between 10^{-4} and 10^{-3} have a half-life of 2,000 years." (p. 714)

Getting it right: Lounsbury 1908

"From the Elizabethan period to this day not a single instance can be pointed out of a strong verb becoming weak, or of having manifested the slightest disposition to become so." (p.704)

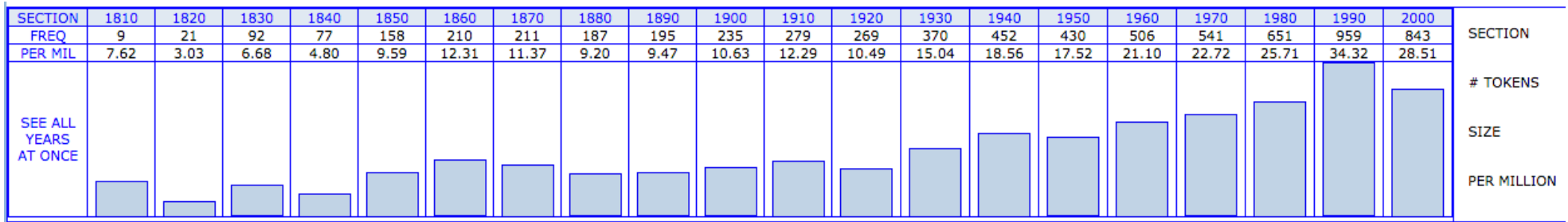
"the struggle between the conjugations exhibits the remarkable though little remarked spectacle of a return of language upon itself, of a complete change in the current of tendency. A movement in one direction which threatened to sweep everything before it was much more than arrested. It was actually reversed." (703)

Illustrating Lounsbury's point – with data from COHA

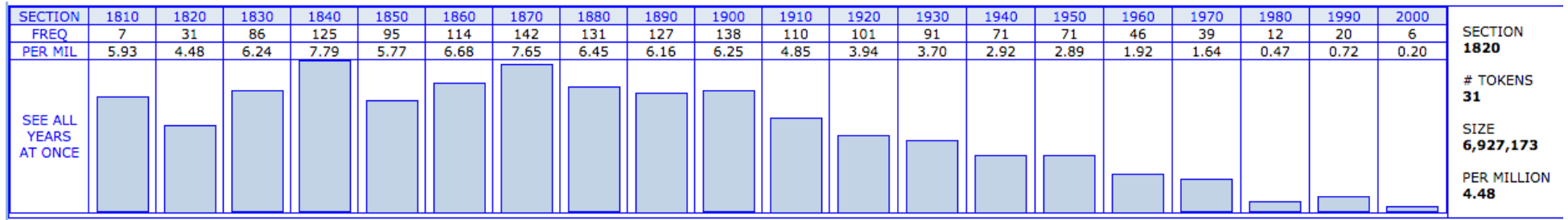
The English Bible, Shakespeare, Milton [...], will be searched in vain for such a tense-form as *woke*. In all these works the preterite is invariably *waked*. [...] it was not till the latter part of the eighteenth century that the now common preterite *woke* makes frequent appearance in books. (Lounsbury 1908:705)

...and look what has happened since
Lounsbury wrote those words in 1908
(data from COHA):

woke























waked



"Only one strong preterite has been added to the language since the Elizabethan period, [...]. *Digged* is the only form of the past tense of *dig* found in our version of the Bible, in Shakespeare, in Milton, or in any writer of the period. It was not until the latter part of the seventeenth century that the now authorized preterite [*dug*] made its appearance in literature. [...]

dug

	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
FREQ	3	67	115	163	181	195	201	190	236	310	396	395	374	499	476	390	376	441	545	627
PER MIL	2.54	9.67	8.35	10.16	10.99	11.43	10.83	9.35	11.46	14.03	17.44	15.40	15.20	20.49	19.39	16.27	15.79	17.42	19.51	21.21
SEE ALL YEARS AT ONCE																				

digged

[illegible]

dig (verb lexeme)

[illegible]

We can see the present attitude illustrated in the case of *dive*. [...] All that would be needed to establish it in good usage would be its adoption by a number of great writers, [...]. But of that event coming to pass there are no signs; and until it does come to pass, *dove* must stand in the list of condemned expressions." (Lounsbury 1908:706).

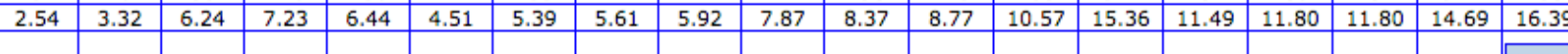
dove

[illegible]

dived

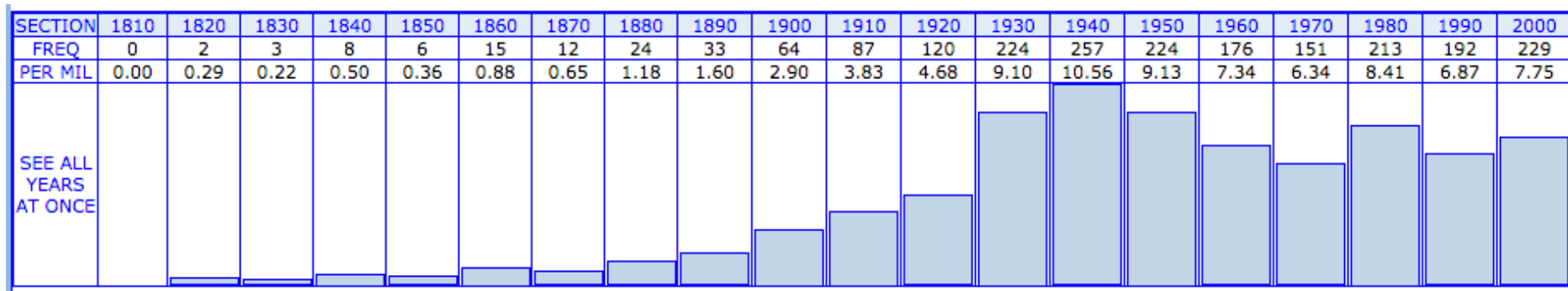
[illegible]

dive (lexeme)

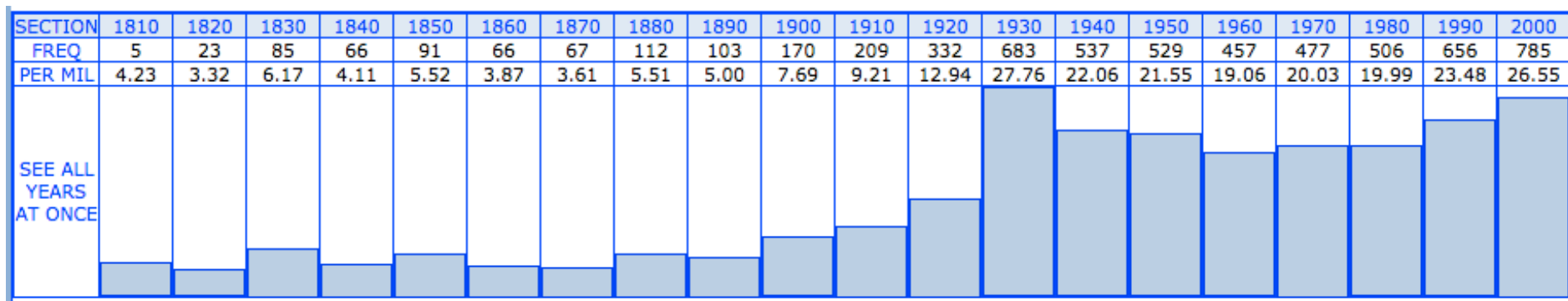
SECTION	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
FREQ	3	23	86	116	106	77	100	114	122	174	190	225	260	374	282	283	281	372	458	509
PER MIL	2.54	3.32	6.24	7.23	6.44	4.51	5.39	5.61	5.92	7.87	8.37	8.77	10.57	15.36	11.49	11.80	11.80	14.69	16.39	17.21
SEE ALL YEARS AT ONCE																				

...and *dive* is no longer alone

spat (as past tense/participle of *spit*)



spit (verb lexeme)



snuck

[illegible]

sneaked

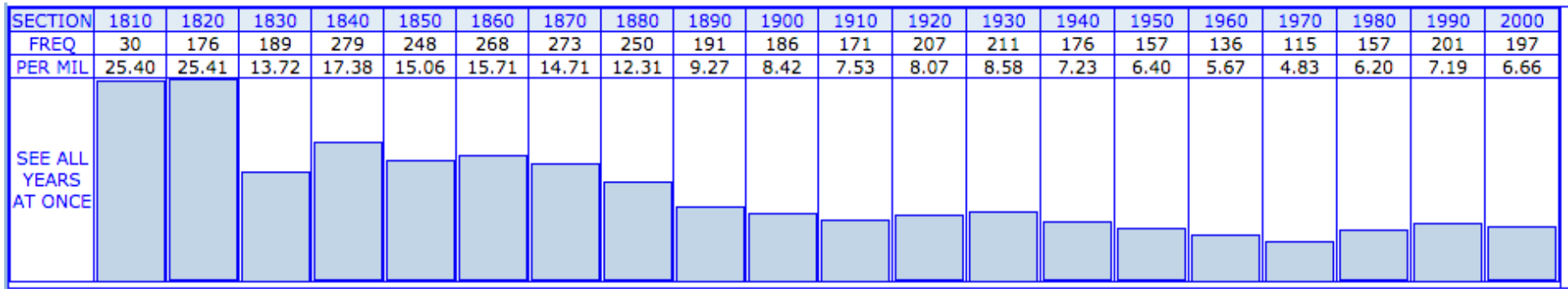
[illegible]

sneak (verb lexeme)

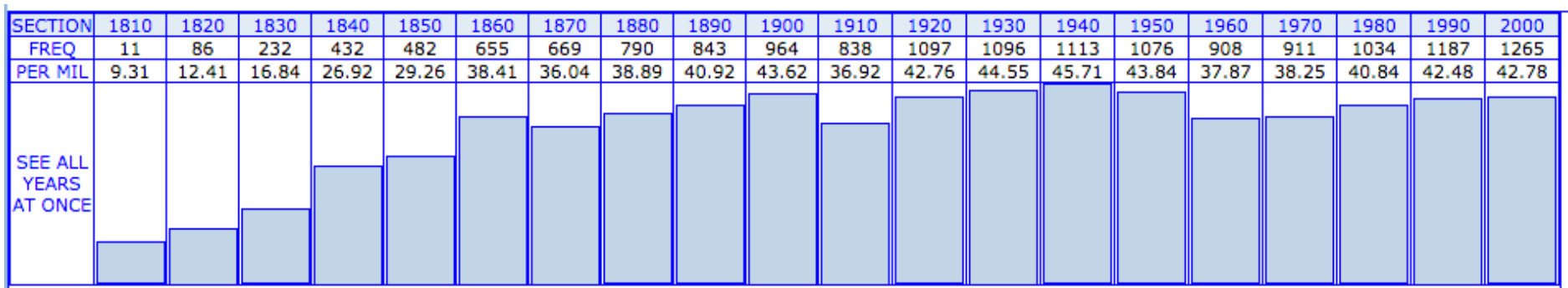
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A few variably irregular weak verbs do show increasing preference for the regular form

burnt

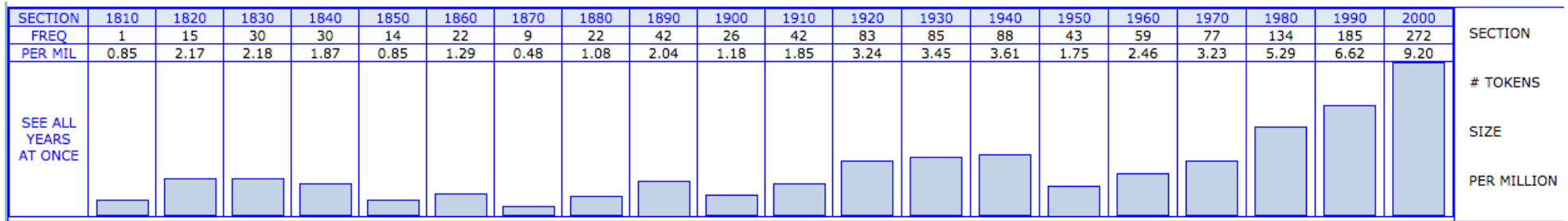


burned

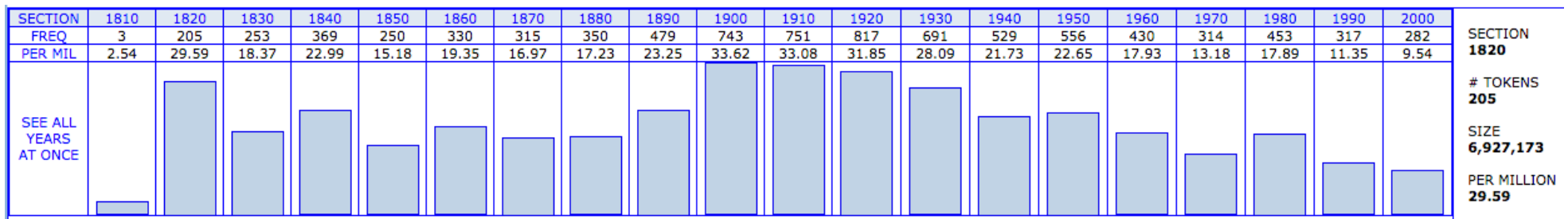


But others have been changing in the opposite direction

leapt

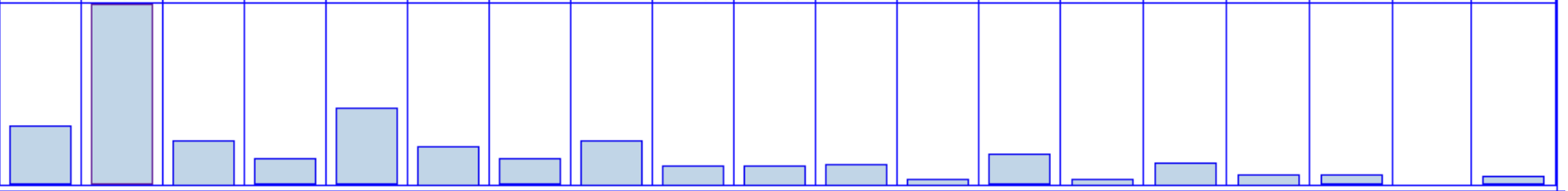


leaped



caught

SECTION	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
FREQ	0	4	25	7	4	13	7	5	9	4	4	5	1	7	1	5	2	2	0	2
PER MIL	0.00	0.58	1.81	0.44	0.24	0.76	0.38	0.25	0.44	0.18	0.18	0.19	0.04	0.29	0.04	0.21	0.08	0.08	0.00	0.07
SEE ALL YEARS AT ONCE																				

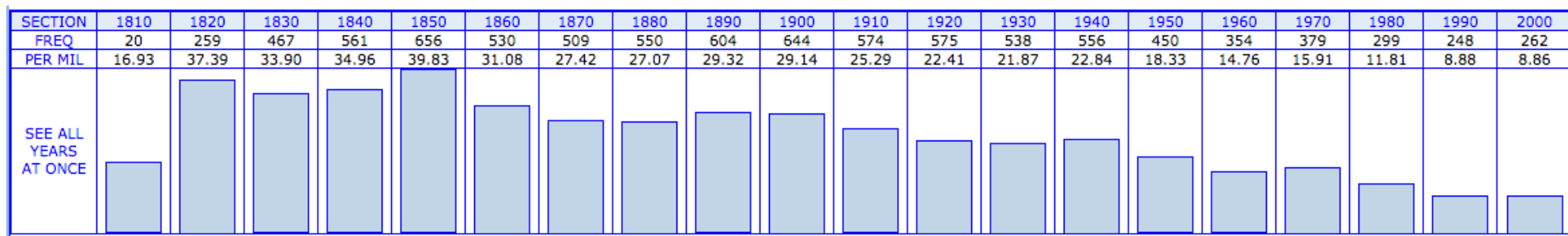


A bar chart representing the 'PER MIL' data from the table above. The x-axis corresponds to the years 1810 through 2000. The y-axis represents the 'PER MIL' value. The bars are light blue with black outlines. The highest bar is for the year 1830, with a value of 1.81. Other notable bars include 1820 (0.58), 1860 (0.76), and 1890 (0.44). The chart is titled 'SEE ALL YEARS AT ONCE' in blue text on the left side.

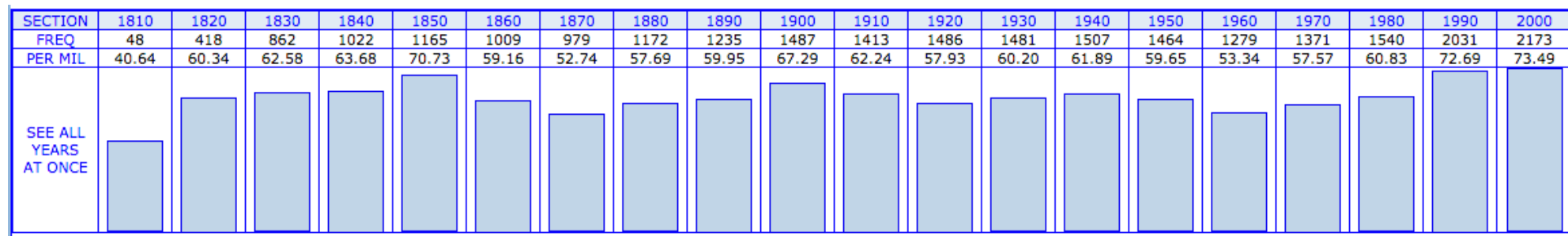
Year	PER MIL
1810	0.00
1820	0.58
1830	1.81
1840	0.44
1850	0.24
1860	0.76
1870	0.38
1880	0.25
1890	0.44
1900	0.18
1910	0.18
1920	0.19
1930	0.04
1940	0.29
1950	0.04
1960	0.21
1970	0.08
1980	0.08
1990	0.00
2000	0.07

The "no-change" class: signs of real productivity

fitted



fit (verb lexeme)



Part IV:
"Wildfire" –
the dynamics of large-
scale regularization

Bloomfield 1933 (I)

"Some nouns fluctuated: [feld] 'field,' plural ['felda] or ['feldas]. We do not know the origin of this fluctuation, but, once granted its existence, we can see in it a favoring condition for the spread of the [-as]-plural. A neologism like ['sunas] instead of older ['suna] 'sons' would perhaps have had no better chance of success than a modern *foots*, had it not been for the familiar fluctuation in cases like the word 'field.'" (p. 410)

Bloomfield 1933 (II)

"It seems that at any one stage of a language, certain features are relatively stable and others relatively unstable. We must suppose that in the sixteenth century, owing to antecedent developments, there were enough alternative plural-forms (say, *eyen* : eyes, *shoon* : shoes, *brethren* : brothers) to make an innovation like *cows* relatively inconspicuous and acceptable." (p. 409)

The standard view

- Many scholars regard the widespread variation in verbal inflection found in late Middle and early Early Modern English as the "natural" state of a language...
- ...and the relative uniformity of later Modern English as an artificial product of standardization
- but what about...

Morphological blocking and the "Unique Entry Principle"

"irregularly inflected forms do not coexist with their regular counterparts; if an irregular form exists in a word-specific paradigm, its regular alternative formed by the general affix paradigm is blocked" (Pinker 1996:177)

This principle is in no way limited to standardized languages.

The wildfire (or epidemic) metaphor

Widespread variation between regular and irregular inflected forms can arise in a language – under certain circumstances

Once such variation starts spreading, it tends to spread "like wildfire" through the lexicon.

But this type of variation constitutes an inherently unstable state for a language.

Within a few generations the wildfire/epidemic is bound to run its course, restoring the stable state captured in the Unique Entry Principle.

Selected references

Bloomfield, Leonard. 1933. *Language*. New York: Holt.

Bybee, Joan. 2015. *Language Change*. Cambridge, UK: Cambridge University Press.

Carstairs-McCarthy, Andrew. 2010. *The Evolution of Morphology*. Oxford: Oxford University Press.

Davies, Mark. (2010-) *The Corpus of Historical American English: 400 million words, 1810-2009*. Available online at <http://corpus.byu.edu/coha/>.

Lass, Roger. 2006. 'Phonology and morphology'. A History of the English Language, ed. by Richard Hogg and David Denison, 43–108. Cambridge, UK: Cambridge University Press.

Lieberman, Erez, Jean-Baptiste Michel, Joe Jackson, Tina Tang and Martin A. Nowak. 2007. 'Quantifying the evolutionary dynamics of language'. *Nature* 479.713-716.

Lounsbury, Thomas Raynesford. 1908. 'Conflicts of usage'. *Harpers* 1908(10).701–706.

Pinker, Steven. 1996. *Language Learnability and Language Development*. Cambridge, MA: Harvard University Press.