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PRECEDENT CONTEXTS IN THE ETYMOLOGICAL STRATIFICATION OF THE HISTORICAL THESAURUS AS REFLECTED IN THE DEVERBAL FAMILIES OF ENGLISH

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Studied in the paper is a reflection of the synonymous strings of verbs in their shared-root coinages over time. The differences in the word-forming and thesaurus-construing potential between native and Romance etymology (Latinate and/or French lineage) parent verbs as regards substantive, adjectival and participial deverbal classes have been established. The cross-sections of the historical thesaurus are forgeable on the parent verbs' etymological affiliation and coinages' suffix variance or uniformity. An electronic framework for the study of the rise of verbal and deverbal synonymous strings over time reconstructed on the basis of the OED textual prototypes proceeds from the constituents sequential placement or absolute dating. Two models of quantification suitable for determining the extent of similarity in the formation of synonymous strings are suggested. The etymological affiliation of parent verbs proves to be selectively related to the diachronic expansion of the respective (sub-)strings of varied lengths and category/formative(s) status.

Key words: etymology, deverbal categories, synonymous stringing, matrix analysis, mean values, expansion similarity.

1. Introductory remarks

Although the lexicon of verbs in English is known for the intermingling of native and borrowed elements little research has been undertaken to concern itself with the relatedness of the etymology of synonymous verbs to the manifestation of their word-forming potential over time.

According to their documented etymons verbs make up two major constituent layers in the English lexicon. The conducted etymological-derivational reconstruction, which for space considerations must be skipped in this paper, confirms 4,252 lexemes of Germanic (native) origin, and 7,654 verbs coming down to Romance sources of the vocabulary expansion of English.

A proportion of verbs of Romance origin are characterized by etymological French and Latinate duplicity [3]. Applying the 'contact link' criterion we tentatively split the latter selection

 into the verbs of French lineage (4,424 lexemes) and Latinate verbs (3,230 items) with the overlap between the two just slightly exceeding one per cent of the joint set.

The parent lexemes initiating the word families involved in this study amount to two thirds of the entire list of the OED registered verbs. We leave out those with vague etymology or implausible reconstruction of a historical cognate. The French lineage and Latinate verbs are processed by the developed system of electronic queries jointly but at times, in the instances of their sufficient divergence as to the studied parameters, also separately.

Similarly to parent verbs deverbal suffixes fall under primordial Germanic and borrowed Romance elements. The aim of the present paper lies in ascertaining the extent of relevance of the etymological stratification of synonymous strings for their constituents' transposition into category-, or eventually suffix-variant/uniform, derived strings.

A type of deverbal derivation is tagged by an ordinal number within a calculus of categories. The respective OED attested coinages motivated by their shared-root verbs were put into a system of the developed electronic queries. A rewriting procedure was introduced to substitute a derived word by its shared-root common category counterpart with (a) variant suffix(es) stored in the appropriate slot extension.

Deverbal coinages tagged (d_n) are created with the help of Germanic or Romance suffixes attached to verbs tagged (v). We are concerned with a reconstruction of the present-day thesaurus of verbs and thesauri of their coinages over time. That is why it is justifiable to study only those lexical items that survived in the course of history. The compiled corpus also includes all the OED registered now archaic verbs and their coinages. They are marked by the following asterisk.

Both etymological groups of suffixes were applied to verbs in the acts of deverbal word-formation. Romance suffixes could also be found within 'ready-made' penetrations. They were entering the recipient lexicon in the conditions of inter-language contact(s).

We introduce a convention of distinguishing among the deverbal categories nine types of coinages. The ordinal calculus is arbitrary, although this feature is indispensable for computerized processing of the data. Within this calculus we count in nouns before adjectives and adjectives before their respective participial satellites. Within nouns we make an extension for lexicalization after action nouns. Coinages with morphonemic changes were treated as those without them.

The Germanic formatives include the suffix -ing for action nouns (**dj)** and action nouns (d_2) that give rise to the same-word factitive lexicalization ($d_{2,}$). Some of action nouns (d_2) are lexicalized into the same-word factitive nouns ($d_{2,}$). Factitive nouns ($d_{2,}$) are mostly semantic extensions of the 'lexicalizable' action nouns (d_2) into the same-word counterparts. They denote the semantic roles of the 'state' or 'result' of the action expressed by the verb as well as occasionally its 'cause' or 'location'. Action nouns that are free of this peculiarity are taken for the 'non-lexicalized' ones (d**j).** Some factitive nouns reveal no same-word action noun counterpart.

Also among the Germanic suffixes there is the formative -er (alternatively but quite exceptionally -ar/-ard) for agent and/or instrument nouns (d_3) and the suffixes -ing and -ed for lexicalized present (d_6) and past (d_8) participles.

The group of Romance suffixes encompasses the formatives -ance/-ence, -age, -ment, -tion/-sion, -ture within action or/and factitive nouns (**dj** ,) as well as the suffixes -or, -ant/-ent and -ive within (extended as above) agent nouns (d_3) and the suffixes -ee and -ant for the formation of patient nouns (d_4). In the Romance group of formatives there are suffixes -ant/-ent/-and, -ive, -ory/ -ary -ous within adjectives (d_5) and suffix -able/-ible within modal adjectives (d_7). The Germanic suffix -er sporadically forms deverbal coinages denoting the object/location of the action (d_4).

Combining the historical information from the OED with that contained in the onomasiological lexicography opens up an area of diachronic semantic research. An accomplished outcome of this approach to the study of lexicon over time is the recently completed Historical Thesaurus of English. It merges lexical items within the semantic fields as they are given in Roget's thesaurus with their appearance over time according to the textual attestation of the respective meanings of words in the OED [4]. We argue that synonymous strings of lexemes when juxtaposed with their constituents' textual prototypes according to the Oxford English Dictionary could be of relevance for historical lexicology as well.

Extracted for this study from the compiled corpus of textual prototypes were the earliest quotations of the etymologically defined verbs and their shared-root coinages as given in the 3rd version of the 2nd CD- ROM edition of the OED [7].

2. The etymological partitioning of synonymous strings of verbs modelled on the OED textual prototypes

For the starting point of analysis we take strings of monolexemic synonymous verbs from Webster's Dictionary of Synonyms [6]. The approach is extendable over other similar dictionaries. A general reference to the relevance of the dictionaries of this kind when discussing the notional structure of the historical thesaurus was recently made in [4, p. 41].

In putting the textual prototypes into the electronic framework for analysis the OED markers circa and about occurring before the prototype's actual date were omitted, period dating was taken into account by the earlier year. Dating by the century, although preserved in the adduced examples, was substituted in the computation by the date of the following quotation or, failing that, by the last year of the respective century.

A rearrangement of the present-day string according to the age of the textual prototypes produces a diachronic reflex of its members' present-day succession initiated by the oldest counterpart. This historical dominant (marked by the asterisked, i.e. reconstructed, inclusion sign ***c** following it) falls on an arbitrary constituent of the contemporary string. The dominant verb within the present-day string at its chronological rearrangement is marked by the bracketed (conditional) sign of inclusion **[c]** put between the lexeme and its dating. The sequence's oldest constituent and its present-day dominant may overlap. Then the notation attached to the respective lexeme is ***c [c].**

At the overlap of the earliest or any other dates in the string the constituents are placed alphabetically. This weak convention will be removed later at the assessment of the absolute chronology of constituents within the compared strings.

A thesaurus of historically consecutive sets of verbs splits into etymological partitions if the respective diachronic cognate of the present-day verb is ascertainable. The said partitioning of the thesaurus gives rise to sub-strings of lexemes concatenated to the etymologically homogeneous dominant unless the entire string contains constituents of the same origin. Both etymologically homogeneous sub-strings and strings constitute the respective cross-sections of the entire thesaurus of verbs. Conversely, thesaurus strings may contain elements that are heterogeneous with its dominant. or etymologically unspecified (and omitted from the present study) elements.

In the majority of Germanic/Romance (sub-)strings the present-day and historical dominants do not coincide, but in about 30 % of cases they do. For space considerations exemplification is given singularly with a diachronically intact or floating dominant (cf. 1-2). The diachronic succession of constituents within the sequence is determined by the respective OED textual prototypes. In the outcomes of queries within this study the textual prototypes are presented in a way similar to the one employed in the Historical Thesaurus of the OED - by their dating.

The construing of a diachronic lexical sequence amounts to the juxtaposition of the respective OED earliest quotations for lexemes (cf. the first examples from 1 and 2). At this stage of analysis with respect to polysemous lexemes the principle of the earliest quotation takes over that of precise sense correspondence:

chatter 1225 *c [c]
to utter a rapid succession or series of short vocal sounds ...
e.g. *Ancr. R.* 152 Sparuwe is a cheaterinde brid: cheatereS euer ant chirme5+so ouh ancre+chirmen & cheateren euer hire bonen;
prattle 1532
to talk or chatter in a childish or artless fashion; to be loquacious about trifles; formerly equivalent to prate; now chiefly said, without contempt, of the talk of young children. e.g. More *Confut. Tindale* Wks. 533/2 So he dooeth but prattle & prate of feling fayth, without the feling of any fayth at all.

sojourn 1290 *c
. to make a temporary stay in a place; to remain or reside for a time.
e.g. *S. Eng. Leg.* I. 147 To *pe* grete Abbeie to pountenie forto soriourni pere, he sende pis holi Man.
stay[c] 1440
... to cease moving, halt., .. .to cease going forward; to stop, halt; to arrest one's course and stand still.
e.g. *Promp. Parv.* 473/1 Steyyn or steppyn of gate (v.r. stoppyn), *restito, obsto.*

The attested lengths of synonymous strings of verbs are split arbitrarily into three ranges containing 2-4, 5-9 (accidentally, abiding by Ingwe's depth hypothesis) and over 9 constituents. In contrast to Romance (sub-)strings, there is a Pappian two-fold drop in the number of attested cases with a one-step rise in complexity (here, the strings' composition) within Germanic (sub-)strings of up to 5 constituting verbs:

(1) Synonymous verbs of Germanic etymology - 2,574 (sub-)strings:
1,087 two-member sequences, e.g. **chatter** 1225 *c [c] prattle 1532;
612 three-member sequences, e.g.; **gnaw** 1000 *c snack 13.., nibble [c]1460;
286 four-member sequences, e.g. **beat** 885 *c [c] stir 888, knead 950, whip 1250;
130 five-member sequences, e.g. **stretch** 900 *c [c] bend 1000, shape 1000, hook, 1250, hump 1785;
116 six-member sequences, e.g. **shift** 1000 *c totter 1200, waver [c 1315], sway 13.., shuffle 1532, teeter 1843;
92 seven-member sequences, e.g. **bow** *c [c] 893 stoop 893 , dip 975, drop 1000, cower 1300, duck 1300, bob 1550;
62 eight-member sequences, e.g. **beset** 1000 *c [c] stone 1200, stab 1375, board 1460, storm 14.., beleaguer 1589, raid 1865, strafe 1915;
45 nine-member sequences, e.g. **gather** *c 725, fold [c] 888, lap 1300, overlay 1300, ruffle 1300, crimp 1398, curl 1447, wrinkle 1528, crease 1588;
144 sequences with over 9 constituents, e.g. **drivel** 1000 *c chatter 1225, babble 1230 [c], clack 1250, mouth 1300, patter 1394, gush 1400, prate 1420, chat 1440, tattle 1481, jabber 1499, prattle 1532, rant 1598

(2) Synonymous verbs of Romance origin - 4,636 (sub-)strings:

1,289 two-member sequences, e.g. **sojourn** 1290 *c stay[c] 1440

1,380 three-member sequences, e.g. **impress** 1374 *c [c] imprint 1374, emboss 1385

906 four-member sequences, e.g. **engross** 1400 *c employ 1460, absorb [c] 1490, engage 1525

139 five-member sequences, e.g. **roll** 1374 *c [c] arch 1400, curve 1594, coil 1611, spiral 1834

117 six-member sequences, e.g. **circle** 1374 *c buckle [c]1386, careen 1600, meander 1612, diverge 1665, zigzag 1777;

118 seven-member sequences, e.g. **scorn** 1200 *c [c] avoid 1300, defy 1300, renounce 1375, reject 1494, repudiate 1545, ignore 1611;

71 eight-member sequences, e.g. **arrive** 1205 *c [c] visit 1225, appear 1250, enter 1250, report 1386, dismount 1544, disembark 1582, halt 1656;

90 nine-member sequences, e.g. **sever** 1375 *c [c] slash 1382, slice 1420, separate 1432 disjoin 1483, gash 1562, dissect 1607, puncture 1699, fracture 1803; 526 sequences with over nine constituents, e.g. **attend** *c [1300, tend 1350, guide 1374, convoy 1375, squire 1386, conduct 1400, accompany [c] 1460, guard 1500, usher 1594, escort 1708, chaperon 1796

Although Romance etymology verbs outnumber their Germanic counterparts (7,654 vs. 4,252 lexemes, respectively) there is a fairly insignificant prevalence of sequences exceeding four constituents within Romance (sub-)strings as compared with the Germanic part of the thesaurus (23% against 19,8 %). This ratio should not seem implausible as there is a high incidence of strings in which the historical dominant and, optionally, one or more constituting verb(s) is/are Germanic. Then the remaining Romance admixture does not constitute a separate sub-string as it fails to produce the historical dominant (earliest constituent) within the string.

3. The etymological partitioning of strings of deverbal coinages from synonymous verbs

The stringing of deverbal coinages from synonymous parent verbs is not given by the existing thesauri for present-day English. However, the respective groupings of deverbal lexemes are ascertainable if we extrapolate synonymous verbs from the thesaurus over filled-in shared-root single/multiple positions in the word families construed on the basis of the attestation of coinages in the OED.

A synonymous stringing of verbs is reflected in the derived lexemes of a given categorial/suffixal affiliation when at least two of the constituting members prove related to these coinages.

Docking the present-day (sub-)strings of English verbs and their counterparts consisting of deverbal coinages with the OED textual prototypes for the respective constituting parent/derived lexemes we obtain a database usable in an onomasiological study of historical word-formation. Within the suggested electronic framework approximately 109,000 such sequences of coinages have been construed for the present paper.

In the analysis below the attested numbers of sequences of varied lengths (with 2 - 4, 5 - 9 and above 9 constituents, respectively) containing derivatives of the constituents of the (sub-) strings of verbs are given in brackets after their overall quotas, if attested, followed by a single exemplification within the medium length range. The length characteristic of strings is also given on the graphs to the queries concerned with the expansion similarity of synonymy at its re-categorisation (see section 4.1 below).

All the analysed coinages were motivated by the verbs. Only appropriate to this fact textual prototypes got included into the corpus. In this way we discarded from the scope of the present analysis the relatedness of individual coinages to nouns that were homonymous with their verbs. The inclusion of 'strange-looking' historically attested suffixed coinages in some instances of string exemplification is effected by their diachronic precedence with respect to the rival form(s) and in others by the suffix uniformity within string modelling.

Suffix rivalry is an optional characteristic of deverbal categories. That is why our description of the etymological cross-sections of the deverbal thesaurus proceeds from (using the above categorial calculus) suffix uniform participial (d_6 d_8) (sub-)stings to more variant as regards the filling suffixes adjectival (d_5 d_7) sequences and then to the sequences of substatives ($dj_{2\ 2,3\ 4}$).

3.1. The (sub-)strings of participles

Participial formatives produce homogeneous coinages with respect to Germanic etymology verbs. Romance verbs when attached to them give rise to etymologically heterogeneous derivatives.

Although past participles (d_8) outnumber present participles (d_6) with the ratio of 3 : 2 (9,039 and 6,537 coinages, respectively) their potential to concatenate synonyms in the derivational reflection of synonymous parent verbs is the opposite: 5,529 strings of present participle in the entire thesaurus are juxtaposed with just 5,322 strings of past participles.

In the synonymous sequences related to two major etymological groupings of parent verbs the (sub-)strings of present participles (d_6) exceed those of past participles (d_8) when they were derived from Germanic verbs. In contrast to this in the corpus of Romance verbs the (sub-)strings of past participles (d_8) slightly outnumber those of present participles (d_6) (3-4):

(3) (Sub-)strings of participial coinages from parent verbs of Germanic etymology:

(a) 2,230 (1,754, 369 and 112 according to length ranges) sequences of present participles (d_6), e.g. **winding** 1530 *c girdling [c] 1598, wheeling 1628, girding 1655, looping 1854, belting 1857, ringing 1883

(b) 1,674 (1,374, 275 and 52 according to length ranges) sequences of past participles (d_8), e.g. **rotted** 1225 *c crumbled 1420, withered [c1470, waned 1593, mouldered 1615, ebbed 1858, drooped 1873

(4) (Sub-)strings of participial coinages from parent verbs of Romance etymology:

(a) 4,002 (3,117, 514 and 371, according to length ranges) sequences of present participles (d_6) e.g. **surmounting** 1407 *c mounting 1550, surging 1566, towering 1598, soaring 1607, ascending [c] 1667, levitating 1859, scaling 1937

(b) 4,132 (3,202, 517, 413 according to length ranges) sequences of past participles (d_8) e.g. **hazarded** 1596 *c ventured 1623, diced 1671, chanced 1853, speculated 1865, wagered [c]1876

3.2. The (sub-)strings of adjectives

In the strings of modal adjectives (d_7) the coinages from Romance verbs are etymologically homogeneous and those from Germanic verbs are not. As regards adjectives (d_5) we come across both etymologically homogeneous and heterogeneous coinages in either class of the verb.

Modal adjectives (d_7) concatenate more strings than adjectives (d_5) from both Germanic and Romance parent verbs (cf. 5-6). This observation poorly correlates with almost equal overall quotas of verbs involved in adjectival (2,050 stems) and modal adjectival (2.098 stems) derivation. Thus there should be limitations on the stringing of adjectives from synonymously related verbs in comparison with that of modal adjectives:

(5) (Sub-)strings of adjectival coinages from parent verbs of Germanic etymology:

(a) 353 (319, 31 and 3 according to length ranges) sequences of adjectives (d_5) e.g. **staggery** 1778 *c [c] wavery 1820, wobbly [c] 1851, tottery 1861, quaky 1864, waggly 1894, teetery 1900, quaverous 1918, shuffly 1926

(b) 1,061 (950, 105 and 6 according to length ranges) sequences of modal adjectives (d_7), e.g. **biteable** 1483 *c grindable 1652, chewable [c] 1846, rendible 1860, gnawable 1885, crunchable 1906

(6) (Sub-)strings of adjectival coinages from parent verbs of Romance etymology:

(a) 2,478 (1,958, 395 and 125 according to length ranges) sequences of adjectives (d_5) e.g. **exclusive** 1515*c exceptive 1563, preclusory* 1609, deletory 1612, omissive [c] 1629, ejective 1657, repudiative 1860

(b) 3,143 (2,446, 448, 249 according to length ranges) sequences of modal adjectives (d_7), e.g. **referrible** 1596 *c [c] committable 1646, assignable 1659, introducible 1673, relegable 1895

In the adjectival deverbal thesaurus a synonymous stringing of coinages from Germanic/ Romance verbs involved mostly etymologically homogenous constituents.

The stringing of deverbal adjectives (d_5) in a Romance suffix from stems of Germanic etymology is very scarce: **thrillant*** 1590 *c [c] tossant* 1616, quaverous 1918; **understandant*** 1400 c **thinkative*** [c] 1662; **talkative** 1432 *c [c] chattative 1873; **noddant*** 1589 *c restive 1599 [c]; **whisperous** 1884 *c [c] quaverous 1918; **talkative** 1432 *c [c] whisperous 1547. The role of Germanic suffixes in the adjectival thesaurus (d_5) from Romance verbs is limited too. Although they make up approximately eighty (sub-)strings, which amounts to just 3 % of the total number of adjectival sequences related to Romance parent verbs, very few of these exceed two constituents, e.g. **resistful** 1614 *c [c] crossful* 1680, reverseful 1875; **flaggy** 1565 *c faintful* 1589, trembly [c] 1848.

The derivatives with Romance suffixes are dependent on French/Latinate etymology of the verbs for the extent of their attestation in the thesaurus: within French lineage stems (sub-)strings of modal adjectives (d_7) outnumber those of adjectives (d_5) by two times (cf. 7). Conversely, within Latinate stems (sub-)strings of adjectives are by 25 % more numerous than those of modal adjectives (cf. 8):

(7) (Sub-)strings of adjectival coinages from French lineage verbs in a Romance suffix:
(a) 1,134 (952, 164 and 18 according to length ranges) sequences of adjectives (d_5) , e.g. **appliant*** 1413 *c imposant* 1502, dispensive* 1590, administrant [c] 1602, determinant 1610, suppliant* 1611, disbursatory 1863
(b) 2243 (1750, 373 and 118 according to length ranges) sequences of modal adjectives (d_7), e.g. **allowable** 1393 * [c] chargeable 1480, authorizable 1530, appointable 1563, attachable 1579, ordainable 1656, assignable [c] 1659, allottable 1869
(8) (Sub-)strings of adjectival coinages from Latinate verbs in a Romance suffix:
(a) 1,236 (1,035, 174 and 28 according to length ranges) sequences of deverbal adjectives (d_5), e.g. **consolidative** 1400 *c [c] abstractive 1490, constrictive 1533, coagulative 1605, reducent 1805, abbreviatory 1847
(b) 957 (820, 131 and 6 according to length ranges) sequences of modal adjectives (d_7), e.g. **committable** 1643 *c [c] nominable 1743, selectable 1836, electable 1879, relegable 1895, allocable 1929, prescribable 1967

The above observation on its surface seems to comply with the derivational productivity of these categories from French and Latinate bases: modal adjectival coinages (d_7) are attested from 970 French lineage verbs and 550 Latinate verbs. With the Romance suffix adjectives (d_5) the correlation is the opposite: 562 French bases and 1,045 Latinate ones. However, this two-fold deficiency in the productivity of adjectives from French verbs gives a relatively high quota of strings. Thus, the predominance of adjectival strings from Latinate verbs sits on reasons different from the inventory productivity of the respective suffixal models.

The uniformity of the suffix in the coinages within a string occurs in two situations. All derivatives may end in one and the same suffix. The strings in which one or more stems reveal suffix rivalry have the respective positions filled with the set suffixal derivative that swaps its diachronically precedent counterpart.

In the case of French lineage verbs for every two suffix-uniform (sub-)strings of adjectives in *-ant/-ent* there are three sequences of adjectives in *-ive.* For Latinate stems this discrepancy goes up to 1 : 3 (sub-)strings (cf. 9-10):

In the formation of adjectives from verbs of French lineage as well as from Latinate verbs, the formative *-ory* yields a limited number of (sub-)strings. Its class counterpart *-ous* is not attached uniformly to Latinate verbs, but it occurs as a constituent of the suffix-variant sequence, e.g. **deviant** 1400 *c [c] fluctuant 1560, digressive 1611, *dissentaneous [c]* 1623, divergent 1696, mutative 1743. A derivational reflection of synonymous verbs of French lineage with the help of the adjectives in *-ous,* contrary to Latinate stems, is still attested (cf. 9 d):

(9) (Sub-)strings of adjectival coinages from French lineage verbs in a single suffix:
(a) 602 (539, 61 and 2 according to length ranges) sequences of deverbal adjectives (d_5) in *-ive,* e.g **fixative** 1434 *c perfective 1596, qualificative 1862, adaptive [c] 1824, appointive 1881, adjustive 1883
(b) 435 (411, 22 and 2 according to length ranges) sequences of deverbal adjectives (d_5) in *-ant/-ent,* e.g **repugnant** 1387 *c disputant 1671, demurrant 1529, protestant 1539, resistiant 1610, opposant* [c] 1611, defiant 1837
(c) 33 (2-4 constituents) sequences of deverbal adjectives (d_5) in *-ory,* e**.g preparatory 1413** *c dissuasory* 1555, admonitory [c] 1594
(d) 20 (2-5 constituents) sequences of deverbal adjectives (d_5) in *-ous,* e.g. **annoyous*** 1340 *c vexatious 1534, pesterous 1548, tormentous* [c]1583, infestious*1597

(10) (Sub-)strings of adjectival coinages from Latinate verbs in a single suffix:
(a) 947 (820, 113 and 14 according to length ranges) sequences of deverbal adjectives (d_5) in *-ive,* e.g.**speculative** 1380 *c estimative 1398, conjecturative* 1541, conclusive 1590, postulative 1623, deducive 1755, predicative 1846

(b) 321 (313 and 8 according to length ranges) sequences of deverbal adjectives (d_5) in *-ant/-ent,* e.g **fluctuant** 1560 *c [c] accomodant* 1693, divergent 1696, evolvent 1708, reducent 1805, regenerant 1855, transmutant 1858, moderant 1897

(c) 106 (2-3 constituents) sequences of deverbal adjectives (d_5) in *-ory,* e.g **objurgatory** 1576, *c vituperatory 1586, recriminatory [c] 1778, reprobatory 1823

Suffix uniformity in the (sub-)strings of adjective (d_5) from stems of Germanic etymology is mostly in -y (cf. 11):

(11) (Sub-)strings of adjectival coinages (d_5) from Germanic verbs in a single suffix:

(a) 296 (270 , 24 and 2 according to length ranges) sequences of adjectives (d_5) in *-y,* e.g. slippy 1548 *c slopy 1740, sinky 1827, tumbly 1855, slidy [c] 1880, stumbly 1890, dippy 1903, stoopy 1905

(б) (2-4 constituents) sequences of adjectives (d_5) in *-ful,* e.g **yearnful** 888 c mournful [c] 1542, bewailful* 1592

3.3. The (sub-)strings of deverbal nouns

The relationships between classes of nouns are more complex in the sphere of action than person nominalization. The nouns for the 'source of the verbal action' (d_3) and patient/object nouns (d_4) are unequivocal as regards the active vs. passive diatheses of the verbal paraphrase. In contrast to this, some action nouns (d_2) unlike those that are devoid of this property (d_1), admit a paraphrase into factitive lexicalizations ($d_{2,}$) typically signifying the state or result of the action expressed by the verb, not necessarily diachronically pre-emptive of the action counterpart and sporadically even non-correlative with the same-word nominalization of the action. In modelling the respective derivationally reflected sequences of parent verbs in the sphere of substantive word formation the paraphrase and the appropriate OED textual prototype determined the categorial affiliation of the derivative and its place in the chronological sequences, which in some cases (as in 12) was accompanied with a shift in the stem affiliation of the historical dominant:

(12) Opposition exemplification, (a) vs. (b), of the string of action nouns (d_1 or/and d_2) and their factitive counterparts ($d_{2,}$) :

(a) **abridging** 1386 (d_1) *c : ... the act or process of shortening the duration of any thing, or lessening it; or of making a short compendium or abstract of a larger work, *e.g. haucer Pars. T. 168 Yit avaylen thay to abrigging of the peyne of helle.*

[abridgement 1494 (d_2): the act or process of abridging or shortening; a shortening of time or labour; a curtailment of privileges, *abyan vi. clxi. 154 His sayde sone+was a cause of the abrygement, or shortynge of his dayes.]*

cutting 1398 (d_2): the action of the verb cut, in various senses,

revisaBarth. DeP.R. xvii. ii. (1495) 597 Wythoutkyttynge or keruynge; abbreviation [c] 1530 (d_2): the act of shortening, reducing in length, *e.g. alsgr. 193 Abrevyation, abreviation. 1576 ambarde Peramb. Kent 233 (1826) Neither hath this our manner of abbreviation, corrupted the names of townes and places onely;*

shortening 1542 (d_2): the action or an act of the verb shorten, e.g. Wyatt *Poems, Epitaph Sir T. Gravener* 12 No sickness could him from it let; Which was the shortening of his days; condensing 1787 (d_1): Chiefly in names of machines, mechanical apparatus, etc., forming virtual compounds (sometimes hyphened), in which it blends with the *vbl. n.* used *attrib.* (= 'for condensing'), e.g. G.Adams *Ess. Microscope 84 There is also a condensing glass to the stage. Ibid. The tube with the condensing lene*

(b) **cutting** 1382 ($d_{2,}$): *c

... *concr.* a piece cut off; *esp.* a shred made in preparing or trimming an object for use, e.g. Wyclif *1 Kings* xi. 31 And he seith to Jeroboam, Tak to thee ten kyttyngis. abbreviation [c] 1460 ($d_{2,}$):

... he result of abbreviating; an abbreviated or reduced form; short summary, abridgement, e.g. J.Capgrave *Chron.* 17 Of these thre sones grew al mankynde in this world, and be what order here schul 3ere have abreviacioun;

abridgement 1523 ($d_{2,}$):

... a compendium of a larger work, with the details abridged, and less important things omitted, but retaining the sense and substance; an epitome, or abstract,

e.g. Fitzherbert *Surueying* 30 He wyll cause his audytoure to make a value in maner of a bridgement of all the ayd minystre accomptes;

shortening 1796 ($d_{2,}$):

. *concr.* A fat or oil used to make pastry, etc., short,

e.g. A. Simmons *Amer. Cookery* 34 *Loaf Cakes* No. 2 Rub 4 pound of sugar, 3 and a half pound of shortning, (half butter and half lard) into 9 pound of flour.

The constituents within sequences of action (d_1 and/or d_2) or factitive ($d_{2,}$) nouns contain Germanic or Romance etymology suffixes. When a (sub-)string of synonymous verbs takes on the (lexicalized) action nouns suffix indiscriminately of its etymology letting into the string the earlier/earliest filling at formative variance Romance etymology verbs give rise to relatively more numerous as well as longer (sub-)strings of factitive nouns ($d_{2,}$) than Germanic verbs (cf. the value of b in 13 and 14):

(13) (Sub-)strings of (lexicalized) action nouns in a precedent suffix from verbs of Germanic etymology:

(a) 2516 (1944, 439 and 133 508 according to length ranges) sequences of action (d_1 or/and d_2) nouns, e.g. **bearing** 1250 *c taking 1330, cartage [c] 1428, bringing 1433, shifting 1440, waftage 1558, freightment 1559, hauling 1626, ferrying 1873

(b) 1278 (1065, 195 and 18 according to length ranges) sequences of factitive nouns ($d_{2,}$), e.g. **taking** 1340 *c bearing 1393, cartage [c] 1428, waftage 1650, freightage 1694, haulage 1883

(14) (Sub-)strings of (lexicalized) action nouns in a precedent suffix from verbs of Romance etymology:

(a) 4578 (3541, 529 and 508 according to length ranges) sequences of action (d_1 or/and d_2) nouns, e.g. **summing** 1387 *c adding [c] 139, calculation 1393, computation 1425, tallying 1440, figuring 1534, enumeration 1577

(b) 3407 (2655, 460 and 292 according to length ranges) sequences of factitive nouns ($d_{2,}$), e.g. deliverance 1290 *c vacation 1386, renouncement 1494, desisting 1607, evacuation 1625, abandonment [c] 1839, discarding 1840, emigration 1863

The (sub-)strings of action nouns in -ing (d_1 and/or d_2) formed on the verbal bases of Romance etymology are almost two times as many as those formed on the native etymology bases. Contrary to this the (sub-)strings of factitive nouns ($d_{2,}$) in -ing from Romance etymology verbs are outnumbered by those made up by the -ing derivatives from verbs of native origin (cf. 15 and 16):

(15) (Sub-)strings of nouns in -ing from verbs of Germanic etymology:

(a) 2510 (1941, 438 and 131 according to length ranges) sequences of action nouns (d_1 or/and d_2), e.g. **evening*** 1230 *c setting 1398, tying 1480, weighing 1485, trimming 1519, matching 1562, steadying [c] 1736

(b) 985 (867, 116 and 12 according to length ranges) sequences of factitive nouns (d_2), e.g. **seething** 1300 *c searing 1395, baking 1440, brewing 1545, steeping 1585, warming 1681, cooking [c] 1804

(16) (Sub-)strings of nouns in -ing from verbs of Romance etymology:

(a) 4224 (3378, 533 and 413 according to length ranges) sequences of action nouns (d_1 or/and d_2), e.g. **confirming** 1297 *c defending 1300, certifying [c] 1387, supporting 1421, approving 1523, ratifying 1555 recognizing 1611

(b) 766 (686, 74 and 6 according to length ranges) sequences of factitive nouns (d_2), e.g. **disguising** 1386 *c attiring [c] 1552, apparelling 1567, mantling 1591, coating 1770, cloaking 1840, costuming 1856, jacketing 1882

In the case of Romance suffixes that are taken on by verbs of Romance etymology the (sub-) strings of action nouns admitting documented lexicalization (d_2) by almost 3.5 times outnumber those that consist of non-lexicalised action nouns (d_1) (cf. 17 a and 17 b). The (sub-)strings of factitive nouns ($d_{2'}$) exceed those of lexicalizable action (d_2) nouns probably owing to the participation of factitive nouns without the respective same-word action noun counterparts (cf. 17 b and 17 c):

(17) (Sub-)strings of (lexicalized) action nouns in a precedent Romance suffix from verbs of Romance etymology:

(a) 750 (665, 75 and 10 according to length ranges) sequences of non-lexicalized action nouns (d_1), e.g. **stimulation** 1526 *c **temperation*** 1615, bracement* [c] 1677, ascendance 1742, reanimation 1797, rejuvenation 1871

(b) 2,556 (2,019, 355, 182 according to length ranges) sequences of lexicalizable action nouns (d_2), e.g. **grievance** 1300 *c [c] deliberation 1374, speculation 1374, consideration 1386, reflection 1386, rumination 1600, ponderation 1646

(c) 2,817 (2,226, 379 and 212 according to length ranges) sequences of factitive nouns (d_2) **enticement** *c proposition 1340, importunance 1546, allurement 1548, entreatance* 1548, invitement [c] 1599, pursuement* 1615

In French lineage verbs, the sequences of lexicalizable action nouns (d_2) and factitive nouns ($d_{2'}$) in the Germanic suffix -ing claim one third of the respective (sub-)strings. In Latinate verbs, the quotas of (sub-)strings of lexicalizable action nouns (d_2) and factitive nouns ($d_{2'}$) in -ing is negligible (cf. 18 and 19):

(18)(Sub-)strings of Germanic suffix substantives in -ing from verbs of French lineage:

(a) 2,609 (2,047, 405 and 157 according to length ranges) sequences of non-lexicalized action nouns (d_1), e.g. **spoiling**1380 *c decaying 1530, soiling [c] 1580, defiling 1585, tainting 1593, sullying 1659, bedaubing 1788, tarnishing 1858

(b) 657 (597, 58 and 2 according to length ranges) sequences of lexicalizable action nouns (d_2), e.g. **feigning** 1375 *c disguising [c] 1395, covering 1400, varnishing 1505, cloaking 1513, veiling 1586, muffling 1788

(c) 673 (608, 62 and 3 according to length ranges) factitive nouns ($d_{2'}$), e.g. **picking** 725 *c purging 1398 [c], scalding 1398, dressing 1504, polishing 1530, scouring 1597, rasping 1655, rinsing 1818

(19) (Sub-)strings of Germanic suffix substantives in -ing from Latinate verbs

(a) 1,094 (938, 138 and 18 according to length ranges) sequences of non-lexicalized action nouns (d_1), e.g. **reducing** 1488*c [c] compacting [c] 1561, coagulating 1626, consolidating 1661, abbreviating 1668, abstracting 1690

(b) 37 (2-3 constituents) sequences of lexicalizable action nouns (d_2), e.g. **aborting** 1580 * c [c] nullifying 1647, expunging 1846 (c) 38 (2-3 constituents) sequences of factitive nouns ($d_{2'}$), e.g. uniting 1728*c [c] providing 1820, collecting 1881

The (sub-)strings with variant Romance formatives from Germanic verbs are few. The majority of sequences are those of factitive nouns ($d_{2'}$). This testifies to the strength of the lexicalization process in the Romance suffix coinages which was also the case with the transpositions from Romance verbs (cf. the relative values of b and c in 19 and 20):

(20) (Sub-)strings of (lexicalized) action nouns in a (precedent) Romance suffix from verbs of Germanic etymology:

(a) 29 (2-3 constituents) sequences of non-lexicalized action nouns (d_1), e.g. **bickerment** 1586 *c [c] squabblement 1731

(b) 148 (2-8 constituents) sequences of lexicalizable action nouns (d_2), e.g. **amazement** 1606 *c clutterment* 1611, minglement 1674, jumblement 1706, puzzlement [c] 1822, worriment 1833, bedevilment 1843, addlement 1859

(c) 304 (272, 31 and 1 according to length ranges) sequences of factitive nouns (d_2), e.g. **dribblement*** 1599 *c sweepage 1628, leakage 1642, flowage [c] 1830, runnage 1864, bubblement 1890, spillage 1934

In Germanic roots the coinages in a Romance suffix enlarge the respective -ing nouns thesauri only slightly, in part owing to the formation of (sub-)strings due to the concatenation of (a) Romance suffix(es) coinage(s) on a single derivative made up with the help of the native suffix -ing, e.g. **offering** 1000 (d_1) *c [c] bequeathment 1607, bestowment 1754. It seems that the native suffix coinage typically opens up such sequences (e.g. **setting** 1398 *c fitment [c] 1608) although the opposite line-up where a Romance

suffix derivative precedes its synonymous -ing counterpart is also attested (e.g. **furtherance** 1440 *c bolstering [c] 1530).

Formative-uniform (sub-)strings involving an arbitrary suffix of Romance etymology are more versatile within the synonymous stringing of French lineage verbs in comparison with verbs of Latinate etymology. In the latter, 85 % of the sequences of action (here encompassing both non-lexicalized (d_1) and lexicalizable (d_2) derivatives on the principle of the earlier counterpart at their variance) and lexicalized action ($d_{2'}$) nouns entail the coinages ending in -(t)ion. The stringing of derivatives in the French lineage stems deverbal suffixation is more versatile with three productive string-constituting formatives although the strings made up with the derivatives ending in (-t)ion, in contrast to the productivity of derivation from Latinate verbal stems, are outnumbered by those in -ment (cf. 21 and 22):

(21) (Sub-)strings of a single Romance suffix substantives from French lineage stems
(a) 968 (807, 162 and 19 according to length ranges) sequences of merged (d_1 and d_2) action nouns in -ment, e.g. **ordainment** 1399 *c appointment 1425, attachment 1447, assignment [c] 1460, enrollment 1535, allotment 1574, authorizement 1594
(b) 925 (772, 139 and 14 according to length ranges) sequences of lexicalized action ($d_{2'}$) nouns in -ment, e.g. **attachment** 1468 *c assemblement* [c] 1470, procurment 1601, accruement 1607, compilement 1624, acquirement 1630
(c) 743 (655, 86 and 2 according to length ranges) sequences of merged (d_1 and d_2) action nouns in -tion, e.g. **temptation** 1225 *c [c] excitation 1400, provocation 1426, transportation 1540, absorption 1597, invitation 1598
(d) 624 (563, 60 and 1 according to length ranges) sequences of lexicalized action ($d_{2'}$) nouns in -tion, e.g. **adoption** 1382 *c acception 1543, confirmation 1553, toleration 1582, affirmation 1593, realization 1611, admission [c] 1622
(e) 356 (327 and 29 according to length ranges) sequences of merged (d_1 and d_2) action nouns in -ance, e.g. **pleasance** 1340 *c [c] sustenance 1386, assistance 1398, supportance* 1490, acceptance 1574, suppliance 1598
(f) 368 (335 and 33 according to length ranges) sequences of lexicalized action nouns in -ance, e.g. **sustenance** 1290 *c pleasance 1340, assistance 1491, aidance [c] 1593, acceptance 1596 supportance* 1597, supplyment 1589
(g) 63 (2-4 constituents) sequences of merged (d_1 and d_2) action nouns in -age, e.g. wre**ckage** 1577 *c [c] spoilage 1597, wastage [c] 1756, wastage 1756, wreckage[c] 1837
(h) 73 (2-4) sequences of lexicalized action nouns (d_2) nouns in -age, **abusage*** 1548 *c [c] spoilage 1816 wastage 1898
(i) 7 (2 constituents) sequences of merged (d_1 and d_2) action nouns in -(t)ure, e.g. **seiziure** 1482 * c [c] enclosure 1574
(j) 29 (2 constituents) sequences of merged (d_1 and d_2) lexicalized action nouns in -(t)ure, e.g. **enclosure** 1816 *c fixture [c] 1860

(22) (Sub-)strings of a single Romance suffix substantives from Latinate stems
(a) 1131 (949, 161 and 21 according to length ranges) sequences of merged (d_1 and d_2) action

nouns in -tion, e.g. **communication** 1382 *c proclamation [c] 1420, exhibition 1432, propagation 1450, circulation 1535, celebration 1580, promulgation 1604, dissemination 1646
(b) 863 (734, 117 and 12 according to length ranges) sequences of lexicalized action nouns (d) in -*tion,* e.g. **vacation** 1386 *c prohibition 1387, termination [c] 1450, inhibition 1532, repudition 1545, extermination 1549, nullification 1630, vitiation 1635, obliteration 1658
(c) 131 (2-4 constituents) sequences of non-lexicalized action nouns (d_1) in -ment e.g. **extinguishment** 1503 *c abortment [c] 1607, erasement 1721, expungment 1891 (d)110 (2-4 constituents) sequences of lexicalized action nouns nouns (d_2) in -ment, e.g. **disquietment*** 1606 *c [c] dispiritment 1827, disheartenment [c] 1830, disruptment 1834
(e) 26 (2-3 constituents) sequences of merged (d_1 and d_2) action nouns in -ance, e.g. demonstrance 1430 *c insinuance 1647, transmittance [c] 1855
(f) 24(2 constituents) sequences of lexicalized action noun nouns (d_2) in -ance, **demonstrance** 1430 *c [c] insinuaance 1647

The nouns denoting the source of the verbal action (d_3) in the form of its agent or/and instrument from the (sub-) strings of verbs of native etymology could end in the Germanic suffix -er only. Within native etymology verbs the sequences of patient nouns (d_4) ending in the Romance suffix -ee become more numerous when the stringing involves the Germanic formative -er for the sporadic coining of patient (eventually, object) both tagged as d_4, i..e. the recipient of action, nouns (23):

(23) (Sub-)strings of source of action/recipient of action nouns from verbs of Germanic etymology:
(a) 2,301 (1798, 405 and 98 according to length ranges) sequences of nouns in the Germanic suffix -er (d_3), e.g. **handler** 1398 *c rubber 1536, clasper 1551, nestler 1611, stroker 1632, petter [c] 1863
(b) 75 (2-4 constituents) sequences of patient nouns (d_4) in the Romance suffix -ee e.g. **hangee** 1831 *c shootee 1837, murderee [c] 1920
(c) 117 (116 and 1 according to length ranges) sequences of patient nouns (d_4) in a precedent arbitrary suffix, e.g **bender** 1596 *c settee 1716, cuttee 1798, plottee [c] 1832, wistee 1900

In Latinate verbs the coining of agent nouns in a Romance suffix yields as many sequences as that in the Germanic suffix -er. (cf. 24 a and 24 b). In French lineage stems the coining in -er produces six times a larger number of (sub-)strings than that in the Romance suffixes (cf. 25 a and 25 b). Hence in Latinate stems, in contrast to the French lineage ones, the number of precedent suffix agent (sub-)strings almost doubles the number of single suffix etymology strings (cf. the relative values of c in 24 and 25 with the aggregate values of a and b).

(24) (Sub-)strings of source of action nouns from Latinate verbs:
(a) 894 (687, 104 and 13 according to length ranges) sequences of agent nouns (d_3) in the Germanic suffix -er, e.g. **expecter** 1584 *c assumer 1600, conjecturer 1612, anticipater [c] 1753, predicter 1885
(b) 899 (783, 106 and 10 according to length ranges) sequences of agent nouns (d_3) in a precedent Romance suffix, e.g. elector 1467 *c constitutor 1531, delegant [c] 1627, nominator 1659, selector 1782, inaugurator 1834, investeror 1862
(c) 1475 (1195, 236 and 44 according to length ranges0 sequences of agent nouns (d_3) in a precedent arbitrary suffix, e.g. **proclaimer** 1548 *c [c] communicant 1552, exhibiter 1599, circulator 1607, celebrater 1609, promulgator 1665, disseminator 1667, propagator 1686, poster 1864

(25) (Sub-)strings of source of action nouns from French lineage verbs:
(a) 3190 (2,483, 449 and 258 according to length ranges) sequences of agent nouns (d_3) in the Germanic suffix -er, e.g. **tempter** 1380 *c exciter 1387, chafer 1395, provoker 1432, offender 1464, vexer 1530, annoyer [c] 1577, affronter 1598, inflamer 1609
(b) 465, 41 and 3 according to length ranges) sequences of agent nouns (d_3) in a precedent Romance suffix, e.g. **oppressor** 1425 *c taintor 1451, persecutor 1484, offendant [c] 1597
(c) 3276 (2555, 454 and 267 according to length ranges) sequences of agent nouns in an arbitrary precedent suffix, e.g. **agreer** 1548 *c reconciler 1563, modifier 1583, correspondent 1630, harmonizer [c] 1678, adaptor 1801, accorder 1860

The merging of French and Latinate stems into Romance etymology (sub-)strings should increase the aggregate number of the attested sequences (cf. 27 with (24) and (25).

(26) (Sub-)strings of source of action nouns from Romance stems
(a) 3924 (3075, 469 and 380 according to length ranges) sequences of agent nouns (d_3) in the Germanic suffix -er, e.g. **feigner** 1382 *c portrayer 1386, representer 1483 rehearser 1530, performer [c] 1588, pretender 1591, burlesquer 1657 mimicker 1847
(b) 1472 (1219, 215 and 39 according to length ranges) sequences of agent nouns (d_3) in a precedent Romance suffix, e.g. **relator** 1591 *c narrator [c] 1611, proclaimant 1847, enumerator 1856. recitor 1880, depictor 1892

(c) 4309 (3342, 514 and 453 according to length ranges) sequences of agent nouns in an arbitrary precedent suffix, **acceptor** 1382 *c [c] considerer 1449, regarder 1525, affirmer 1540, conceiver 1581, concluder 1601, postulant 1759

Within the sequences of the nouns denoting the recipient of the action from Romance bases (27) French lineage stems reveal patient nouns suffix versatility (cf. 27 b and c) whereas Latinate stems produce strings of nouns only in -ee (27 d). The latter are incorporated into the Romance suffix(es) sequences (cf. 27 a):

(27) Sub-strings of the recipient of action nouns from Romance etymology verbs

(a) 579 (532, 42 and 5 according to length ranges) sequences of patient/(object) nouns from Romance stems in a precedent suffix, e.g. **recoveree** 1531*c retainer 1540, protectee 1602, rescuee [c] 1950

(b) 389 (366 and 23 according to length ranges) sequences of patient nouns (d_4) in a precedent arbitrary suffix from French lineage stems, e.g. **grantee** 1491 *c recognizee 1592, confirmee 1600, confessee 1601, acquiescer 1800, adoptee 1892, admittee [c] 1900

(c) 345 (325 and 20 according to length ranges) sequences of patient nouns (d_4) in a precedent Romance suffix from French lineage stems, e.g. **vouchee** 1485 *c [c] confirmee 1600, contendent* 1641, warrantee 1668

(d) 117 (113 and 4 according to length ranges) sequences of patient nouns (d_4) from Latinate stems in a precedent Romance suffix, e.g. **devotee** 1657 *c donatee 1716, dedicatee 1760, restrictee 1959

3. Diachronically expanding sequences of the etymological (sub-)strings of verbs and their coinages: models of assessment

The rearrangement of parent/derived etymological (sub-)strings according to the age of the constituents' textual prototypes is significant for the historical derivational thesaurus. Such (sub**S**trings came into being variedly both in terms of the entire expansion sequence and the time lag that elapsed in each instance of diachronic complementation.

Different deverbal categories may, but not necessarily should, be related to divergent compositions of stems, eventually just roots, from the (sub-)string of parent verbs. Although derivational constraints could be optional not all verbs take on suffixes and a sequence of coinages is typically shorter than that of their parent lexemes.

In the overall evolution (complete diachrony) no sequence of coinages is longer than that of their parent counterparts. The assumption turns out to be too strong, however, for period reconstruction (short or even distant diachrony) in view of the fact that textual prototypes of some derivatives precede those of their parent lexemes owing to inter-language contacts, but possibly also because of incomplete documentation.

A conceivable path to the study of synonymous constituents' sequencing over time lies in matrix analysis. A similarity matrix can be construed for each pair ofjuxtaposed sequences [1].

A matrix consists of the row (here, technically, the left hand-side list) where constituents are written chronologically and column with the placement of constituents in the order of stems from the row. The parent and derived categories could be ascribed to either the matrix row or column.

In order to estimate the *expansion similarity* (*chronotropism)* of the two synonymous sequences the placement of each pair of constituents in respect to the positioning of their counterparts sharing common roots across the diagonal is to be considered.

The squares in the matrix are marked with plusses on condition that the chronological rise of the respective pairs of synonyms in both (sub-)strings (for this matter the matrix is symmetrical) is sequentially convergent. It occurs when the textual prototype of the *i-th* constituent from the column (sub-)sting (here for technical reasons the right hand-side list) is younger than its preceding and older than its following same-sequence counterpart(s) just as the relative chronology reference between the preceding/following constituent(s) and the said *i-th* constituent's counterpart in the matrix row string (likewise, the left hand-side list). If these conditions are not met, there is dissimilarity in the strings constituents' succession and the respective matrix squares on both sides of the diagonal are marked with a minus (fig. 1).

Example BARK

BARK	885	BARKER	1393	X-- ++ +++
YELP	888	YELPER	1340	-X+ ++ +++
CRY	1225	CRIER	1380	-+X ++ +++
BAY(bark,utter)	1340			+++ X- ---
HOWL	1386	HOWLER	1859	+++ -X -++
GROWL	1389	GROWLER	1753	
YIP	1440			+++ -- X++
GNAR	1496			+++ -+ +X+
SNARL(dogs:growl)	1589	SNARLER(dogs:growl)	1634	+++ -+ ++X
GNARL*	1593	GNARLER*	1811	
YAP	1668	YAPPER	1823	

Fig. 1. Comparison of diachronic sequential positions of the -er agent nouns with those of their shared-root parent verbs

In the exemplification to the developed **queries** individual matrices and their cross-categorial row/column length (un)specified groupings contain synonymous verbs and their shared-root derivatives together with the dates of the respective OED textual prototypes. Matrices of chorotropism are sorted by the length of the constituents and put together numerically. Each individual matrix is downloadable from the developed framework.

The above example appears to be three elements shorter than the original composition as the verbs *cry, bay* and *yap,* unlike the dominant *bark,* do not take on the suffix *-er.* To avoid empty rows/columns in the matrix caused by derivational constraints we omit the verbs that do not produce a coinage of a given category. For this we place the verbs' (sub-)string in the matrix column (fig.2).

When there are no derivational constraints with respect to any of the verbs their (sub-)string in the

Example BARK

YELPER	1340	YELP	888	X-++++
BARKER	1393	BARK	885	-X++++
SNARLER(dogs:growl)	1634	SNARL(dogs:growl)	1589	++X-+-
GROWLER	1753	GROWL	1389	++-X+-
GNARLER*	1811	GNARL*	1593	++++X-
HOWLER	1859	HOWL	1386	++---X

Fig. 2. Comparison of diachronic sequential positions within a sub-string of verbs and their shared- root -er agent nouns

matrix column remains unchanged. Otherwise its composition is curtailed. The column of the matrix containing the verbs has only those constituents that give rise to the derived lexemes of a chosen category by an arbitrary moment of diachrony or throughout diachrony at large. The latter are encompassed in the matrix row.

An assessment of the sequential similarity in the diachronic growth of the parent and derived thesauri is obtainable from a quantification of the comparison results presented in the matrices of chronotropism [2].

$$\hat{A} = \begin{pmatrix} A_{11} & A_{12} & A_{13} & \dots & A_{1N} \\ A_{21} & A_{22} & A_{23} & \dots & A_{2N} \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ A_{N1} & A_{N2} & A_{N3} & \dots & A_{NN} \end{pmatrix}$$

Let a corpus of matrices for an arbitrary cross-categorial domain

be A . . = 0,1.

The positive and negative outcomes of the sequential comparison of the matrix column and row constituents (plusses and minuses in the squares) are imputed the numeric values of plus one and minus one, respectively.

Then the extent of the inter-strings sequential reflection within this corpus of matrices can be obtained from the equation

Where *i* does not equal *j*.

The mean value of this reflection $n_k(N)$ at specific length**M** of the (sub-)string $k = 1,2,3, ...M$ in the matrix row can be received from the equation

$k=1$

If two arbitrary constituents of a string have the same year textual prototypes and their counterparts in the other matrix triangle are also characterised by the same year textual prototypes (not necessarily falling on one and the same year when viewed across the diagonal), the sequential expansion of the two pairs is equally identical and the respective squares are marked with a plus.

Some pairs of constituents in the upper matrix triangle have their textual prototypes with varied OED dating but their counterparts across the diagonal are identically dated. This fact does not invert the 'earlier/later' or 'later/earlier' prototypes' correlation.

We have to discard the respective squares from quantification by equalling them to zero if identically dated prototypes are contained within the matrix column sequence as the original question concerning the earlier/later placement of two such constituents cannot be asked at all (fig.3). Such cases are insufficient numerically to upset the obtained mean values of expansion similarity in the etymological stratification of the lexicon at large, but they may be more significant at period partitions from the general set.

Fig. 3. Qantification of the sequential expansion of a sequence
of agent nouns and their parent verbs of Romance etymology

The precedence/follow-up relationship between the (sub-)string's constituents can be defined proceeding from the dating of the respective textual prototypes. Where we have plusses in the previous version of assessment there will be negative values of age differential. And where there are minuses we will have positive values. Textual prototypes dated in the same year must be omitted from the assessment of relative similarity expansion of strings, but they are incorporated into the absolute assessment of age values differentials using formula (2). Understandably, at all the positions marked with a plus there could be still narrower distances between pairs of column string constituents as compared with some positions marked with a minus since consistently progressive line-up chronologically may be quite narrow in the sense of the actual age differential. So the obtained curvature gives reasons for the assessment of both sequential similarity and chronological homogeneity.

In the absolute assessment method the age differential values while comparing the sequences constituents' placement within the string are typically negative. Within the relative assessment method an overlap of the sequential expansion of two (sub-)strings at a given length of the matrix row sequence equals plus one. That is why the mean values of similarity are smaller than this value, but larger than minus one.

Discussion

Two-member sequences in a matrix row reveal only convergent (predominant) or divergent expansion, respectively. A growth in the length of the row sequence leads to a finer grading of the expansion divergence of the respective pairs of strings. The convergence of the expansion basically ceases to be predominant in the cross-categorial domain when the row (sub-)string has three constituents. The complete divergence of the expansion (all minuses in the similarity matrix) occurs considerably rarer that its complete convergence within two (sub-)strings.

A balance between the two outcomes of comparison of the verbal thesaurus with its deverbal reincarnation constitutes the latter's diachronic ontology. It is deemed to comply with the criteria of naturalness for diachronic onomasiology, its prime prerequisite lying in the parent verb pre-empting its coinages. For this reason the more convergent pairs of string outnumber the less convergent ones.

If a measure of chronotropism (sequential similarity) with the string of verbs is an intrinsic feature of all or at least some derived categories, the respective patterns of its mean values distribution are expected to produce sufficiently variant (with their own trajectories) and generally fluctuation-proof (non-overlapping) curves for types of word formation within attested lengths of the strings. However, some of the categories under certain circumstances or 'from the start' may not be characterised by the said distribution pattern. They may also be in a specific way responsive to the etymological (sub**l**ayers of parent verbs and the etymology of variant suffixes (cf. section 2) as well as to the relative vs. absolute chronology dichotomy of lexical temporal dynamics suggested in section 3 above.

4.1. The (sub-)strings of verbs and participles

The expansion of synonymous (sub-)strings of verbs of Germanic etymology is more reflexive of the sequential logic of the (sub-)strings of present participles (d_6) than of past participles (d_8). In the (sub-)strings of verbs of Romance etymology, a higher sequential similarity falls on their transposition into past participles (d_8) (cf. the *y* axis values on the charts of two lower tiers of fig. 4).

This assessment for Romance verbs yields smooth individual length distribution in past participles

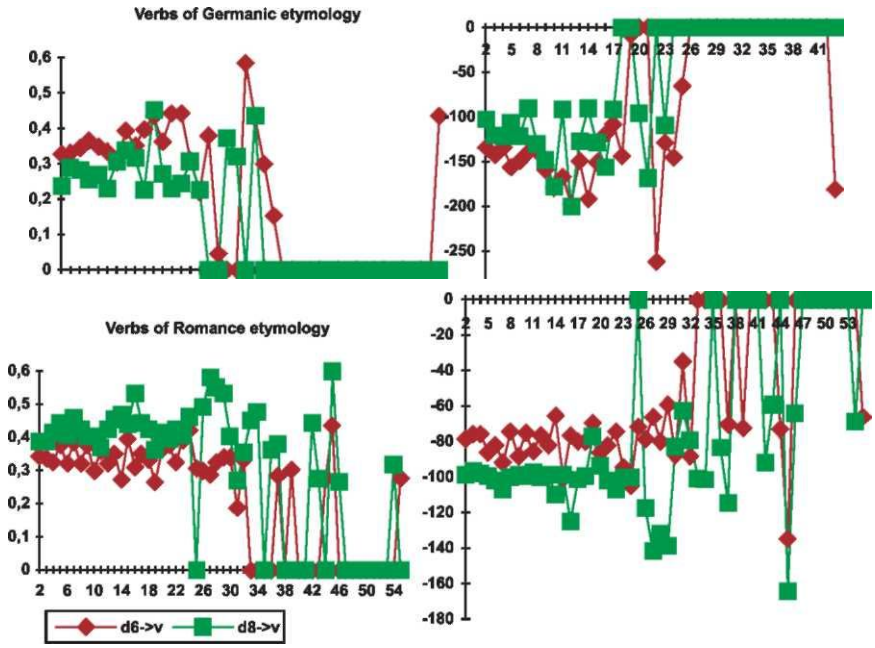

Fig. 4. Expansion similarity of participial (matrix row) (sub-)strings and their parent verbs (matrix column) correspondences: axis x - lengths of row; axis y - mean values of chronotropism. Here and on the diagrams below fractional values on axis y stand for relative assessment of the expansion similarity of strings and mean age differential values expressed in years for the absolute assessment

(d_8) contrary to present participles (d_6), which can be seen from the square and rhombus curves on the lower tier right hand-side chart of fig.4.

4.2. *The (sub-)strings of verbs and adjectives*

In the etymological classes of parent verbs the expansion of (sub-)strings of adjectives is less imitative of the rise of verbs than the expansion of (sub-) strings of modal adjectives (fig. 5).

This divergence has its explanations in the fact that adjectives (d_5) provide a larger share of verbs chronologically younger than the coinage owing to 'direct borrowing' than modal adjectives (d_7), the tendency being more pronounced within Latinate rather than French etymology verbs (fig. 5). In the corpus of word families from verbs of native etymology the curves diverge almost identically with those obtained for the verbs of Romance etymology (fig. 6). Within the Romance stems adjectives are less imitative of the expansion of verbs than modal adjectives owing to a higher incidence of borrowings that pre-empt the verb. In the corpus of native verbs strings of adjectives (d_5) are mostly made up by the coinages in the Germanic formative *-y*. That is why they are more similar to the expansion of verbs than strings of modal adjectives. Hence, the relative location of curves on the charts of figure 6 and the reasons for lower and higher age differential mean values of adjectives and modal adjectives are variedly conditioned.

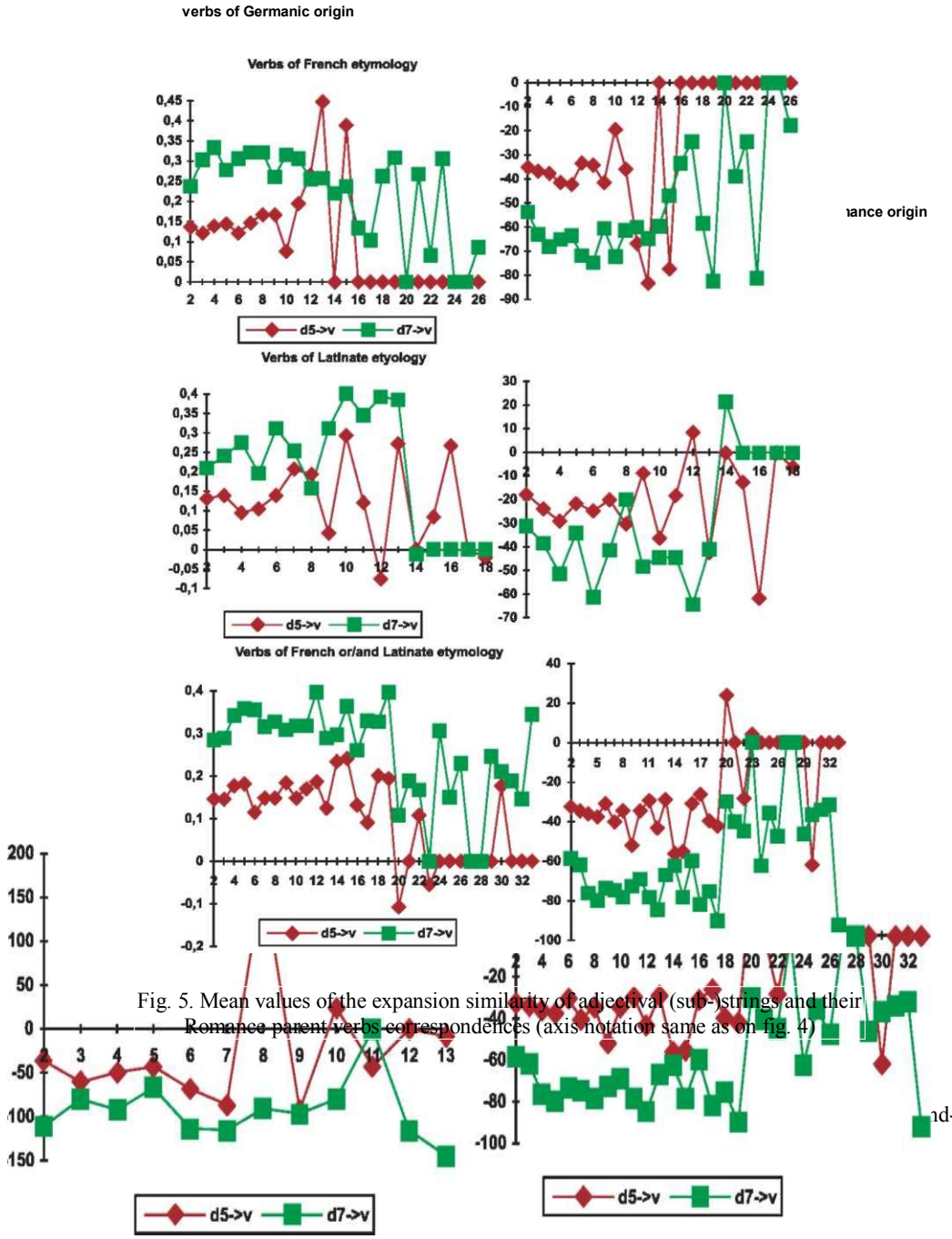

Fig. 5. Mean values of the expansion similarity of adjectival (sub-)strings and their Romance parent verbs correspondences (axis notation same as on fig. 4)

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4.3. *The (sub-)strings of verbs and substantives*

In the synonymous (sub-)strings from both native and Romance verbs most lengths reveal a decrease in the extent of sequential similarity to parent strings from action through agent to factitive nouns. The larger absolute values of the age differential in the case of native verbs could be conditioned by the factor of their chronological depth (cf. the upper tier charts on fig. 7). The (sub-)strings of nouns in Romance suffixes fail to form a clear scale of differences between the substantive categories as regards this parameter, which in the case of Romance verbs might be related to a high incidence of borrowed coinages antedating the attestation of the respective verbs (cf. medium right hand-side and bottom right hand-side charts on fig. 7). The exclusion of the Romance suffix coinages from the strings motivated by Romance etymology verbs leads to a clear difference in the extent of their expansion similarity between action ($d_{1/2}$) and agent (d_3) nouns. This difference is also quite pronounced when string expansion is analysed for French etymology

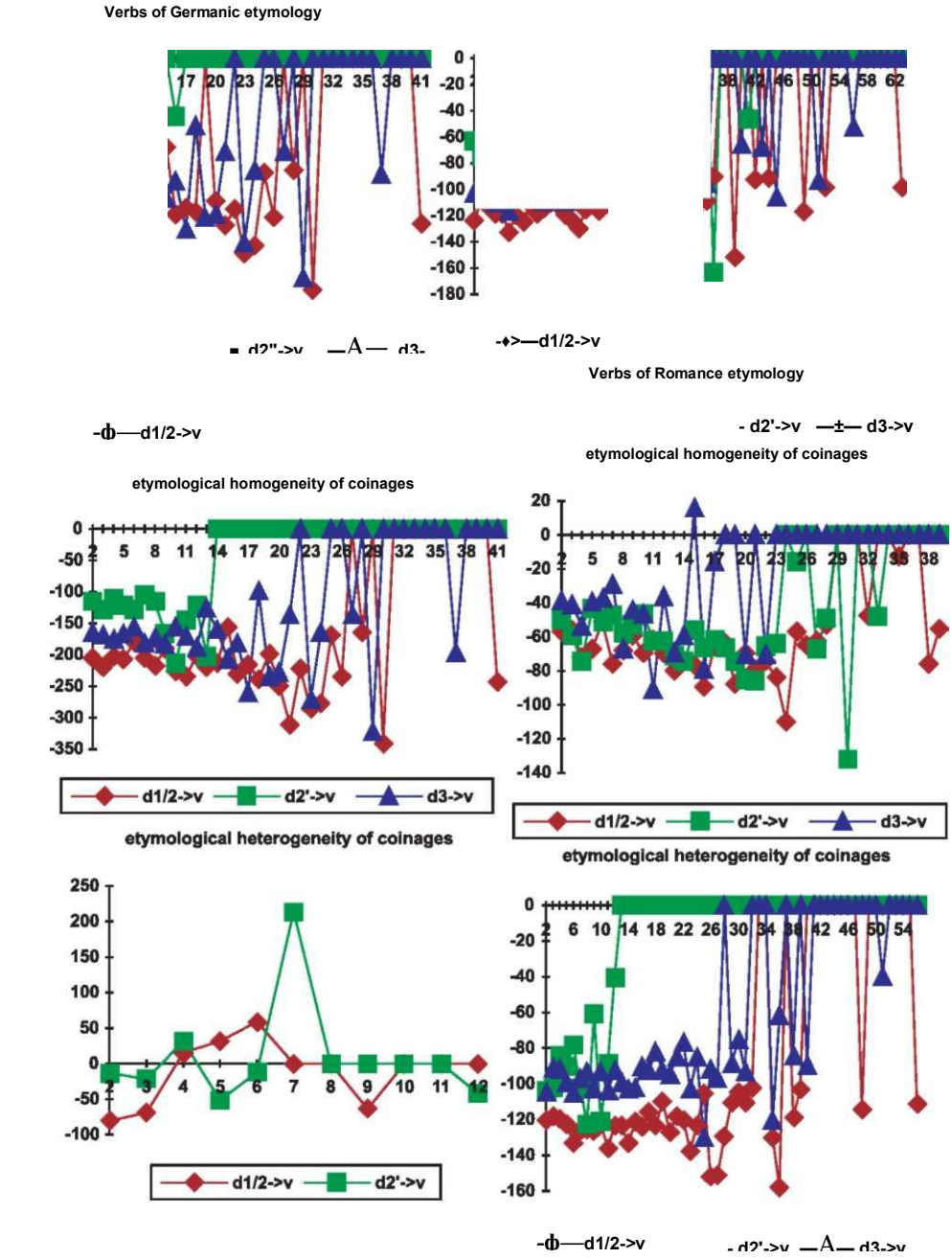

Fig. 7. Mean values of the expansion similarity of substantive (sub-)strings and their Germanic/Romance parent verbs correspondences (axis notation same as on the right hand-side charts of fig. 4)

and Latinate verbs separately (cf. the right hand-side charts on fig. 8). The powerful strings of agent nouns from Latinate verbs in a Romance suffix unlike those from French lineage verbs fail to reveal lower similarity with the expansion of verbal strings than other substantive categories (cf. the left hand-side charts on fig. 8).

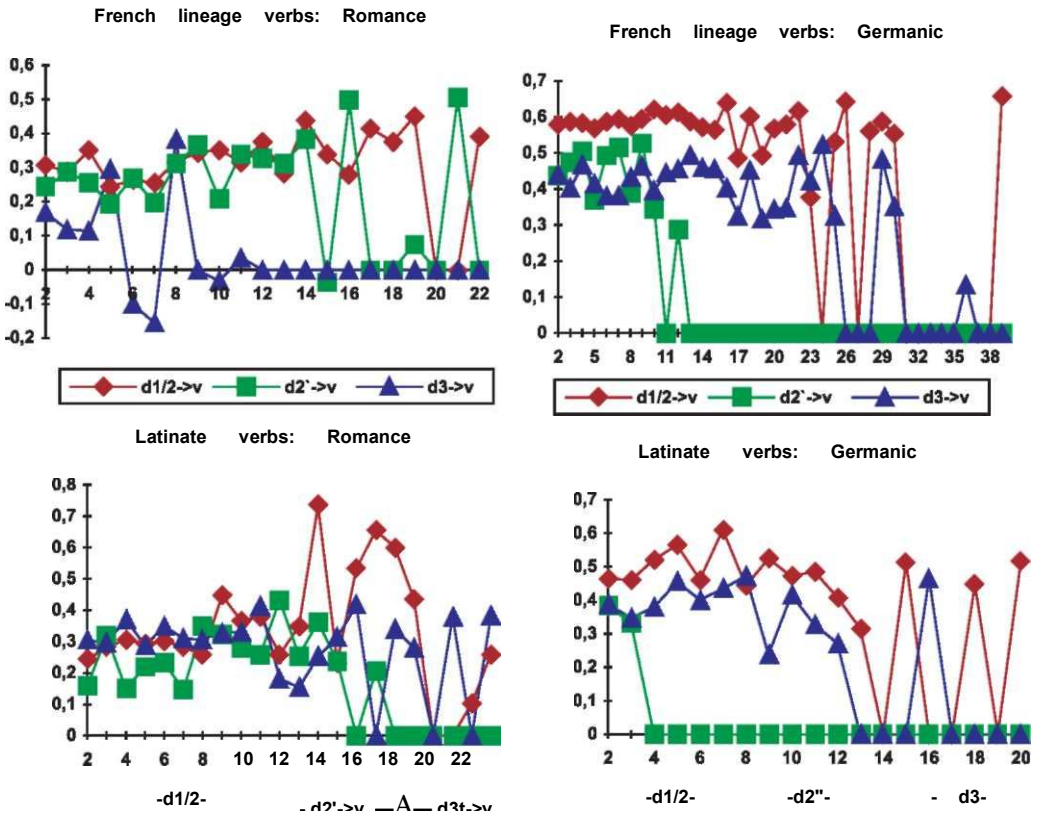

Fig. 8. Mean values of the expansion similarity of substantive (sub-)strings and their Germanic/Romance parent verbs correspondences (axis notation same as on the left hand-side charts of fig. 4)

Concluding remarks

In this paper I presented category-varied reflections of strings of verbal synonyms in the diachronic word formation of English. The construed strings of derived coinages characterized by suffix variance/uniformity of constituents can tell us more about the inventory and complementation of vocabulary segments over time.

Put to test in the present study was the extent of relevance of a binary native/Romance or triple native/French/Latinate stratification of parent constituents and the etymological affiliation of formatives for the entire historical thesaurus of verbs and their coinages. This apparent distinction proves to have been working quite intricately, and at times failing, in respect to specific categories and suffixes in the thesaurus.

Relative and absolute modes of sequential deficiency are computed for the mean rates of divergence between strings of varied categorial affiliation, length and, quite specifically for this paper, etymological status of parent verbs and transposition formatives.

The system of developed electronic queries seems to be able to address in the corpus linguistics format with the ensuing diagram visualization and sampling possibilities the problem that "within a word family, we must examine the relationship of different parts of speech, especially where their dates of currency differ widely" [5,p. 113].

The whole approach owes its deemed epistemic value to the corpus of diachronic textual evidence from the monumental Oxford English Dictionary.

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ПРЕЦЕДЕНТНІ КОНТЕКСТИ В ЕТИМОЛОГІЧНІЙ СТРАТИФІКАЦІЇ ІСТОРИЧНОГО ТЕЗАУРУСА АНГЛІЙСЬКОЇ МОВИ:
(на матеріалі віддієслівних словотвірних гнізд)

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Вивчено структуру категоріальних зон віддієслівного тезауруса в історії англійської мови з можливістю моделювання подібності розгортання його частин у діахронії. Евристика запропонованого підходу базується на суцільній вибірці текстових прототипів та матрицях хронотропності, що включають порівняння місця лексем в ономасіологічному просторі для макросемантичного рівня словника.
Ключові слова: етимологія, віддієслівні категорії, синонімічні ряди, матричний аналіз, середні значення, хронотропність

ПРЕЦЕДЕНТНЫЕ КОНТЕКСТЫ В ЭТИМОЛОГИЧЕСКОЙ СТРАТИФИКАЦИИ ИСТОРИЧЕСКОГО ТЕЗАУРУСА АНГЛИЙСКОГО ЯЗЫКА
(на материале отглагольных словообразовательных гнезд английского языка)

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Изучена структура категориальных зон отглагольного тезауруса в истории английского языка с возможностью моделирования сходства развертывания его частей в диахронии. Эвристика предложенного подхода базируется на сплошной выборке текстовых прототипов и матрицах хронотропности, которые содержат сравнения места лексем в ономасиологическом пространстве для макросемантического уровня языка.
Ключевые слова: этимология, отглагольные категории, синонимические ряды, матричный анализ, средние значения, хронотропность.

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