scient-ist f. science. 5) The sf is tacked on to a Latin or Greek stem which has, however, no adapted English equivalent, as *lingual* from L *lingua*, chronic f. Gr chrónos. Groups 4) and 5) will be referred to as word-formation on a foreign or Neo-Latin basis of coining (wffb). 6) Words which have originally been borrowed separately come to take on the form of derivative alternations in English on whose pattern new words may be derived: on the analogy of *piracy* as from *pirate*, candidacy can be formed from candidate. This method will be referred to as correlative derivation.

4. 1. 12. The difference made here between the two methods of wfnb and wffb does not correspond to the traditional distinction between derivation by means of native and foreign sfs. For native sfs, as pointed out, the derivative basis is always native. But with sfs of foreign origin the basis of coining may be either native or foreign or both. The sf -al derives postal, seasonal f. E post, season, and lingual f. L stem lingua, horizontal f. Gr stem horizont-; -ify forms dandify, monkey/y as well as aurify, carnify, -ism derives both words such as Englishism, Irishism and Anglicism, Briticism. This may suffice to indicate what the reader will find more in extenso under the respective sfs.

Suffixing on a Neo-Latin basis of coining

4. 1. 13. The question of wffb which I have touched upon in a general way will need a few remarks with special regard to suffixing. As far as is necessary for the restricted treatment of wffb in this book I will give a short summary of the laws of NL derivation, regarding as Latin also Greek words which have been fitted into the Latin structural system. As English has only sfs beginning with a vowel as far as Latin is concerned, we need only discuss these.

L words in -a drop the final vowel before the vowel of the sf: Rom-anus, aqu-osus, Thom-ista. This explains E architectur-al, lingu-al, propagand-ize, Spinoz-ism etc., derivatives from actual or possible L words in -a.

L words of the -o declension drop the genitive ending: equ-inus, ole-arius, offici-osus, miracul-osus, Scöt-ista. Cp E ocul-ist, balne-al, cloistr-al (L claustrum, in LL pron. clostrum, yields OF cloistre under the influence of cloison), asbestine (L asbestus) etc.

L words of the *-u* declension retain the u: *actu-alis*, *spiritu-alis*. English exs are *casu-ist*, *contractu-al* (though it is at the same time analysed as English-coined contract-ual).

L words of the third declension drop the genitive ending: mar-inus, su-inus, iur-ista, Aristotel-ista. To this group belong E carn-ify, multitudin-ous, carbonize, dramat-ize. L stems in -tat- simplify the stem into -t-: tempest-ivus, calamitosus. This accounts for E derivatives from -ty words with an elided vowel: alacrit-ous, societ-al, facilit-ate, libert-arian, annuit-ant.

When the stem ends in the same vowel as the sf begins with, the vowel appears only once: Lat-inus (f. Lati-um), evangel-ista, anatom-ista (f. anatomi-a). Correspondingly we have in English Americ-an, Kore-an, scient-ist, alchem-ize, allerg-ic, even alkal-ine (f. alkali). As NL words in -ia, -ium are anglicized as -y words, we get the alternations -y/-ic, -y/-ize, -y/-ist, -y/-ism (alchemy/ alchemize, allergy/allergic etc.).

Derivatives from adjs are similarly formed: E historic-ity, femine-ity (L femineus), technical-ity, spectacular-ity.

With deverbal derivatives the stem is usually that of the second ptc: passivus, absolut-orius, struct-ura. Cp. E product-ive, admiss-ive etc. (see 4.5). Less frequent is derivation from the present stem: cad-ivus, with elision of the final vowel noc-ivus, opt-ivus, a type imitated in English by cresc-ive, quer-ist (but cp. 4.5.2).

Learned words are chiefly coined on a Neo-Latin basis. Cp. for instance the numerous words in *-ist*, as scholarly or scientific terms all latinizingly derived (e.g. scientist, psychiatrist, formed after L jurista, baptista). Words used in science, such as argentic, aurous, bromine, buccal, are all derived on a Neo-Latin basis. The sf *-aster* is English in the same sense: it forms words on a Latin basis as musicaster, poetaster, theologaster, criticaster, but never any such words as **writaster*, **paintaster*. Words in *-ity*, as catholicity, historicity fr. catholic, historic show by their pronunciation that they are not simply derived from the corresponding adjs (historically speaking). Latin-coined are adjs in *-atory*, as *informatory*, observatory, investigatory, though many can be analysed as native-coined. The sf *-trix* is termed 'a learned feminine suffix' by Jespersen (VI. 15. 94). This does not really explain matters. We observe that *-trix* is only found in genuine Latin words, being the feminine counterpart of masculine sbs in *-tor*. Such words are chiefly found in legal terminology, as administratrix, executrix, mediatrix, testatrix. In Geometry, words in *-trix* denote straight lines.

4. 1. 14. What I have pointed out shows the influence Latin has exercised on the coining of English words. The great share Latin has in the English vocabulary has always been recognized. But this is a matter of linguistic sociology rather, whereas wffb concerns the physiological structure of the vocabulary. The forms of linguistic thought themselves are for a great part Latin. Similar observations could be made about other European languages (French, German) and about international scientific terminology in general (so far as it is not altogether Latin in form).

4. 1. 15. There are many words, esp. in scientific terminology, which are used in their Latin form. Many words have been coined on English soil which, as technical terms, form part of the English vocabulary. But as most of them have not been actualized, they do not interest us in wf. Their treatment belongs to the external history of the language. Such words sometimes acquire a semi-general currency, as AE oceanarium 'underwater zoo', vocarium 'collection of gramophone records of the human voice', abortarium 'hospital specializing in abortions', ritualarium 'Jewish ritual bath' (q. MeAL⁴, Spl. I. 355), coined after Latin place-denoting words like aquarium, terrarium, planetarium etc.

4. 1. 16. Suffixing on a foreign morphological basis offers an aspect similar to that observed with prefixes. There are 1) terminal elements which are suffixes in Greek or Latin, as (in anglicized form) -ic, -ism / -an, -ine; 2) such final elements as are really second-words of Latin resp. Neo-Latin compounds, as (in anglicized form) -scope, -tomy / -parous, -facient. 3) There is a third group of scientific sfs which were artificially coined, but have the appearance

of Latin or Greek sfs: -ad, -one, -ol, -yl. In wfnb we have termed sfs such terminal elements as can be tacked to an English word. In wffb, however, the decision is not so easy. The word scientist is generally considered a suffixal derivative as -ist is universally held to be a sf. A word such as galvanoscope, however, is either not analysed at all or said to be galvano-plus -scope (OED). But what is -scope? The OED terms elements like galvano- combining forms' and elements such as -scope 'terminal elements'. This terminology only begs the question as to what these elements really are in wf. In this book I have called 'prefixes' such derivative elements as can be prefixed to full words without, however, being independent words themselves in English. Consequently we might term 'suffixes' such terminal elements as are tacked on to full words without, however, their having an independent existence as words in English. Neither scientist nor galvanoscope are analysable as 'English word plus affix'. Yet, there is a great structural difference between the two words. The radical of *scientist* is immediately connected with the word *science* of which it is merely an allomorph, so to speak. The case is different with galvanoscope and, generally speaking, with cbs with 'terminal elements'. The first-word cannot be connected with any independent English word as its allomorph. I have therefore treated words of the type scientist while I have left out cbs with 'terminal elements'.

Occasionally they develop into sfs attached to an English word (wfnb), as in bumpology, bumposopher (both jocular from bump 'protuberance on the cranium as the sign of special mental faculties'), bancomania, scribbleomania, queenomaia, leatheroid, hurrygraph, creamometer, speedometer, storiology, weatherology, dollolatry a.o. But on the whole, these terminal elements coin words within the lines of wffb.

Wf on a NL basis of coining may enter the group of correlative derivation (cp. 4. 1. 17) when both radical and derivative have been introduced into the language so as to represent a derivative alternation (words in *-ic/-icity, -ine/-inity, -ocious/-ocity* and many others, part of which have been treated in this book). I have not, however, dealt with alternations such as *horizon/horizontal, science/scientist* which have not the character of derivational types in English. Alternations which are not type-forming, have no morphophonemic value. Such cases have been treated under the respective sfs as derivatives on a NL basis of coining.

Derivative alternations

4. 1. 17. The English vocabulary has been greatly enriched by borrowings, chiefly from Latin and French. In course of time, many related words which had come in as separate loans developed a derivational relation to each other, giving rise to derivative alternations. Such derivative alternations fall into three main groups.

Group A is represented by the pairs 1) -acy/2 - ate (as piracy ~ pirate), 1) -ancy, -ency/2) -ant, -ent (as militancy ~ militant, decency ~ decent), 1) -ization/2) -ize (as civilization ~ civilize), 1) -ification/2) -ify (as identification ~ identify), 1) -ability/2) -able (as respectability ~ respectable), 1) -ibility/2) -ibleas convertibility ~ convertible), 1) -ician/2) -ic(s) (as statistician ~ statistics), 1) -icity/2) -ic (as catholicity ~ catholic), 1) -inity/2) -ine (salinity ~ saline).

If 1) is a derivation from an English word, the only possible word is 2), i.e. if *piracy* is a derivative from an English word, only *pirate* is possible. The statement does not imply that for every 1) there must be a 2). 1) may be a loan, or it may be formed on a Latin basis without any regard to the existence of an English word at all (*enormity*, for instance, is so coined). Nor does the derivational principle involve the existence of a 1) for every 2) (many words in *-able* or *-ine* are not matched by words in *-ability* resp. *-inity*).

Group B is represented by the pairs 1) -ation/2) -ate (as creation ~ create), 1) -(e)ry/2) -er (as carpentry ~ carpenter), 1) -eress/2) -erer (as murderess ~ murderer), 1) -ious/2) -ion (as ambitious ~ ambition, 1) -atious/2) -ation (as vexatious ~ vexation).

If 1) is a derivative from another English word, the derivational pattern 1) from 2) is possible, but not necessary. A derivative in *-ation* such as *reforestation* is connected with *reforest*, a derivative such as *swannery* is connected with *swan*, *archeress* is connected with *archer*, *robustious* is extended from *robust* (but otherwise an adj in *-tious* derived from a sb points to the sb ending in *-tion*, i.e. we have really type A).

Group C is nothing but a variant of A and concerns adjs in *-atious*, as *flirtatious*. Originally deriving from sbs in *-ation*, the type is now equally connected with the unextended radical, i.e. *flirt* (the older derivation ostentatious 1658 has not entered this latter derivational connection).

4. 1. 18. Learned words or scientific terms which are NL or their anglicized adaptations come to enter into morphologic relations with their derivatives formed on a Greek resp. Latin basis of coining. The majority of coinings are formed after the principle of correlative derivation, but sometimes the adaptation of loans has led to patterns of coinage on a native basis, as type problem/problematic, globe/globose, herb/herbaceous. Alternations have been treated under the respective sfs. As I have not dealt with sfs which have not led to coinages on a native basis, I will mention here such as would otherwise have had to be omitted. The types corpuscle/corpuscular and carbuncle/carbuncular [sl/kjələr] resp. [kl/kjələr] (concern adapted L words in -culum deriving adjs in -cularis resp. words in -usculum deriving adjs in -uscular). Exs are crepuscle/crepuscular, muscle/muscular || appendicle/appendicular, auricle/auricular, fascicle/fascicular, follicle/follicular, furuncle/furuncular etc.

Type mania/maniac [19/1æk].

The type is important on account of the many cbs with *-mania* as a second element. The sf *-ac* resp. *-iac*, as in *prosodiac*, *elegiac*, *demoniac*, *Egyptiac* (marked "obsolete" in OED, but commonly used by Toynbee), forms words on a L basis (all the foregoing words are anglicized Latin *-iacus* words). The termination has proved productive in English thanks to *maniac* (L *maniacus* which seems to be a Latin extension as the Greek pattern is not recorded) and the numerous cbs of which it forms the second element. Exs are anglomania/anglomaniac, bancomania/ bancomaniac, bibliomania/bibliomaniac, egomania/egomaniac, kleptomania/kleptomaniac, megalomania/megalomaniac, scribbleomania/scribbleomaniac etc. The same alternation we have in hypochondria/hypochondriac, paranoia/paranoiac.

Suffixal derivation and stress

4. 1. 19. This question has been much neglected. The accentuation of long English words of non-native origin is usually treated with little regard to the derivative patterns, which makes a few words here all the more desirable¹. We are, however, only concerned with the principal stress, leaving aside the question of secondary stress. Various trends and tendencies can be observed as acting and counteracting forces in the English stress system.

The most important factor is the tendency toward homological stress. All native sfs and the great majority of foreign sfs are attached without causing the main stress of the radical to change its place (good/goodness, father/fatherhood // love/loveable, fulfill/fulfillment).

With words of foreign origin or English coinages formed by means of foreign sfs which do not enter the foregoing group we find either preservation of the foreign stress pattern (in words borrowed or coined in the MoE period) or a correlative stress pattern (see 4. 1. 17).

¹ O. Jespersen, MEG I. 5. — Stanley S. Newman, On the stress system of English (Word 2. 171ff.). — B. Danielsson, Studies on the accentuation of polysyllabic Latin, Greek, and Romance loan-words in English, with special reference to those ending in *-able*, *-ate*, *-ator*, *-ible*, *-ic*, *-ical*, and *-ize*. Stockholm Studies in English. III. 1948.

This book has no direct bearing on our subject as the standpoint of the author is not morphological. D. is not primarily interested in the derivative role of stress though he recognizes the stress of underlying English bases (= "derivative accentuation" p. 37ff.) as an important factor causing deviation from the principal stress patterns. The chief cases relevant to our subject are words in -able (pp. 55-86) and *-ize* (pp. 192-216) whose stress patterns bear out what we have termed the homological stress tendency in English. D. is sometimes disenclined to assume derivative stress. The words analogical, arithmetical, economical, harmonical, hemistichal, nonsensical, philological, physiological, simonical were formerly stressed on the same syllables as their bases, but D. holds that these stressings "are probably due to misprints" (p. 188). Why? The stress may have been derivative, but then a latinizing tendency set in: the stressing analógical arose from the Latin analógicus (with -al replacing -us) or as an extention of E analógic, the stress in the latter being again due to the stress in the Latin analógicus with the Latin ending dropped (the stress pattern $\perp ic$ had come to prevail as early as the 16th c., see Danielsson p. 186).

It does not seem to me to matter very much whether a derivative has four, five, or six syllables so long as a word is derivationally connected with a certain basis. If D., who has set up his types according to the number of syllables of the words, establishes (p. 57) a type of pemptotone accentuation for *authorizable*, *liquefiable*, one of hectotone accentuation for *dikalifiable*, *mineralizable* etc., we would, from our point of view, simply state that derivation in *-able* does not cause shift of stress with regard to the basis. If we learn that hectotone accentuation "has never been very frequent" (p. 57), we should rather say that, anyway, derivatives of six syllables from tetrasyllabic bases are not numerous. But no stress principle can be involved in D.'s statement. If e.g. *sýstematize* had derived an adj in *-able* (it does not seem to exist), it could only be stressed on the same syllable as the basis.

Homological stress is a greater force in PE—and Danielsson's extremely valuable book shows that the tendency is several centuries old—than one might think. 4. 1. 20. The following sfs involve stress shifting as against the stress pattern of the unsuffixed basis. The main stress of the radical becomes a secondary stress in the derivative (the dash indicates the syllable preceding the sf): al (only in certain cases, see 4. 6. 2), arian, ary (only in certain cases, see 4. 13), ation, -eé, -eén (both type jackeen and velveteen), -eér, -ése, -ésque, -étte, aial, aian, aious, -idian, aic, -ician, aiy, partly aual.

4.1.21. If a foreign-coined word has not been actualized (i.e. is not analysable as composed of two English morphemes, word resp. stem plus sf), it seeks connection with another English word to which it stands in a kind of quasiderivational relation (as systematize after system, decisive after decide, significative after significant). We can no more than point out this tendency, the study of which would throw interesting side lights on wf. It would show how far words which derivationally speaking have no relation to each other, are felt to be connected.

4. 1. 22. Loans or foreign-coined words show a tendency to stress the antepenultimate. Cases of loan words and their stress are not relevant to wf, but the tendency has its place here insofar as many sfs form words on a Latin basis of coining ($_{ity}$, $_{ial}$, $_{ian}$, $_{ual}$) or have become productive on a native basis in the MoE period only when the older antepenultimate stress tendency had long taken root ($_{ical}$, $_{ial}$, $_{ual}$, $_{ian}$, $_{drian}$, $_{drious}$, $_{orial}$, $_{orious}$; $_{ic}$ owes its stress pattern either to L $_{icus}$ or older E $_{ical}$). The tendency also applies to cases in which a sf has a merely adapting function in anglicizing nonactualized loans (verbal -ate, $_{ferous}$, $_{gerous}$ etc., see 4. 71. 10ff.; -ologer, -ologist, -osopher, -osophist, -ographer, -ography, -ology, -osophy, -olatry, -ocracyand other -y (Gr -ia) words). Historically it accounts for the stress in -ician, -dtion which were trisyllabic originally.

4. 1. 23. In loans or foreign-coined words of three or more syllables, the antepenultimate tendency is counteracted if the last two syllables are closed syllables or if the last is closed and the last but one has a long vowel or diphthong. In this case the next to last is stressed. Relevant to wf are certain cases of sf -al (instruméntal as against instrument, see 4. 6. 20). But it may be observed that homological stress is perhaps slowly progressing with regard to words containing a long vowel or diphthong in the last but one. Súicidal, gérmicidal, hómicidal are more frequently heard than suicidal, germicidal, homicidal (the only stressing the OED gives).

4. 1. 24. With sfs which acquired derivative force in the MoE period the stress pattern of the language from which the first words were taken, has not been changed, which accounts for the retention of stress on the sfs -ése (Italian), -ésque, -eér, -étte, -eén (French resp. for type girleen, Irish), -iána (Latin). That -eé words which are very old in the language have the stress on the sf is probably due to their character as words of a particular group (legal terms). The retention of the foreign stress pattern is the same as that in recent loans from French in -age (masságe etc.), -ade (barricáde etc.) and from Latin -ose (bellicóse etc.). For other such words see Jesp. 1. 5. 8.

4.1.25. The sfs of foreign origin which involve no stress shifting are those which had derivative force already in the ME period. An exception is $\perp ual$

for which derivative pairs existed before 1400. Homological stress has not, however, developed (with the exception of *spirit/spiritual*), probably on account of the small number of derivatives (see 4. 6. 18), possibly also under the influence of $\angle ial$ words. Other sfs have become productive on a native basis of coining too late for a homological stress pattern to be able to uproot the much older rhythmic stress pattern that had developed with loan words ($\angle ical, \ \angle ity, \ \angle ic$; see also above 4. 1. 28). The sf -*ician* also has preserved the ME stress pattern with the original French secondary stress on the first changed into the principal stress. The trisyllabic form, common till the 16th c. (see Jesp. I. 9. 87), is probably one of the reasons. Otherwise the derivative alternation *magic/magician* existed as early as the 14th c. (see 4. 44. 1).

4. 1. 26. With the stressing of words in *-ation*, *-arian*, *-arious*, *-orial*, *-orious* the Latin has probably played a part. The speaker was certainly conscious of the Latin words in *-átio*, *-árius*, *-órius* for which the English words stood. It is otherwise difficult to understand why no homological stress pattern should have developed between purify/purification, canonize/canonization though the derivative alternations are as old as the 14th c.

Phonological changes of vowel or consonant in derivation

4. 1. 27. Derivation by means of foreign sfs, esp. those which derive on a NL basis, often involve phonological changes of vowel or consonant. Vowel and consonant changes most often go with stress shift. In several cases, however, we have vocalic and consonantal alternations but no shifted stress. Exs of the latter are: sincére/sincérity [ir/ernt], *austere/austerity, severe/severity, extreme/extremity*; bronchítis/bronchític [ants/ntk], otitis/otitic, peritonitis/peritonitic; tenácious/tenácity [ešəs/æsnt], capacious/capacity, predacious/predacity; ferócious/ferócity [ošəs/psnt], atrocious/atrocity.

Vowel and consonant changes are accompanied by stress shift in the following cases:

Type ártifice/artificial, ávarice/avarícious [1s/1šəl] resp. [1s/1šəs].

If a word in -ice, pron. [15] (or occ. [a15]) derives by means of a sf beginning with [1] (chiefly -ial, -iary, -ious), we have the alternation [15 (a15) /1šəl, 1šəri, 1šəs]. Exs are benefice/beneficial, beneficiary, auspice/auspicial, auspicious, prejudice/prejudicial, office/official, officious, with [ai] in the radical sacrifice/ sacrificial, vice/vicious.

Type mechánic/mechanícian. This correlative type implies the phonological alternation [1k/išən]. For exs see 4. 44.

Type históric / históricism / historícity. If a word in -ic forms derivatives in -ism -ist, ize- (without stress shift), *ity* (with shifted stress), the alternations [1k/1812m, 1818t, 1811-] are involved. Exs are attic/atticism, atticist, atticize, historic/historicism, historicist, historicity, aesthetic/aestheticism. The change occurs also with derivatives from -ac: Syriacize (Toynbee) f. Syriac. Catholic, catholicism, catholicity shows an isolated stress pattern. The preceding phonological alternations have derivative value.

4. 1. 28. As for the other vowel changes involved, the following tendencies are observed. The full stressed vowel of the initial syllable in the radical is