IN SEARCH OF PERFECTION

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From time to time, a puzzle contest comes along which is logologically interesting or significant. Such a contest was the recent Word Marathon sponsored by Games magazine. The deadline for receipt of all contest entries by the sponsor was September 4, 1984. The contest results will probably be announced in the December 1984 or the January 1985 issue of the magazine.

The problem posed by the contest was that of constructing a chain of substitute-letter transposals. For the benefit of readers unfamiliar with such transposals, MIRACLE is a substitute-letter transposal of DECIMAL, because the D in DECIMAL has been replaced by an R, with the changed group of letters being rearranged to form a new word, MIRACLE. The longest known well-mixed substitute-letter transposal is ELECTROCATAPHORETIC into THEORETICOPRACTICAL, but even longer ones are possible, such as DISESTABLISHMENTARIAN into ESTABLISHMENTARIANISM.

The objective set for contestants in the Word Marathon was to construct the longest possible chain of substitute-letter transposals, using words of the greatest possible letter length, introducing a new letter of the alphabet with each transposal. The longest possible chain of substitute-letter transposals was, therefore, a 27-word chain, with each of the last 26 words in the chain introducing a different one of the 26 letters of the alphabet. The score earned by a solution was the number of different letters introduced by the word chain, multiplied by the number of letters in each word of the chain. A 17-word chain, introducing 16 letters of the alphabet, with each word of the chain 9 letters in length, would therefore have a score of 16 x 9 = 144.

The contest placed various restrictions on the words used. All of them had to be single, solidly-written, uncapitalized words free of hyphens, apostrophes, or periods, found in or derived from Webster's Third Edition. Included among the words allowed were the regular inflectional forms of nouns, verbs, and adjectives, even if these inflectional forms did not appear in boldface type in the dictionary. Excluded by the rules were two-or-more-word phrases and single words appearing only as parts of such phrases. I surmised that the contest rules had been formulated at least partly in an attempt to thwart the use of a computer to produce the best possible solution to the contest problem, and to make even the use of routine word lists an extremely laborious procedure. I liked that!

The obvious goal of constructing a complete 27-word chain of comparatively long words was a logologically impelling one, and the various restrictions on allowable words served to make all admissible solutions aesthetically attractive. This combination of characteristics was logologically irresistible, and 1 decided to try my hand at the problem - quests for verbal perfection have always attracted me.

My snap judgment was that a complete chain of 10-letter or 11-letter words was probably possible, but that devising such a chain would involve a great deal of work. 1 therefore warmed up to the task by fashioning first a complete 6-letter-word chain, then a complete 8-letter-word chain. The 6-letter words took me only some 15 minutes to put together; the 8-letter words, about two hours. Neither effort required a significant use of the diction-ary or of word lists, confirming my judgment that the real problem lay witn 10- or 11-letter words.

1 was now ready to tackle the problem of a 10-letter-word chain. After some hours, I had a 26-word chain featuring 25 letters of the alphabet. The missing letter was W. Additional hours went by, but I could not add a W-word to the chain. Contemplating the chain, 1 realized that almost all of my words were of Latin or Greek origin, whereas almost all W-words were of Old English origin. The two kinds of words are qualitatively different, with the result that they do not connect well. For instance, all of the words in my chain used either 4 or 5 vowels, whereas a consider-able proportion of 10-letter W-words used only 2 or 3 vowels. Also, many W-words included other uncommon letters of the alpha-bet - letters such as K, B, or F - making it difficult to work them into a chain of words primarily of Latin or Greek origin. 1 did, eventually, succeed in completing my chain (shown below) using the W-word CONTRAWISE. It seemed interesting that this was a most untypical W-word: its first six letters were a prefix of Latin origin, while its last three letters coincided with such a suffix, so that the W in CONTRAWISE was the only un-Latin letter in the entire word!

Word	New Letter	Word	New Letter
UNPOETICAL	-	REJECTIONS	J
PHONETICAL	H	PRENOTICES	P
PLEONASTIC	S	RECAPTIONS	A
CINEPLASTY	Y	CONTRAWISE	W
NYCTALOPES	O	REFACTIONS	F
NEOPLASTIC	1	ZIRCONATES	Z
PSALTERION	R	CARBONIZES	B
LORANSKITE	K	BLAZONRIES	L
CLARIONETS	C	BANDOLIERS	D
ALECTORIUS	U	GIRANDOLES	G
QUERCITOLS	Q	OVERLADING	V
UNCLOISTER	N	OVERDATING	T
CENTRIOLES	E	OVERTAXING	X
MORENCITES	M		

Score: 26 x 10 = 260

Beginnings: ABCGLMNOPQRUZ
Endings: CEGLNRSY

lt is inherently improbable that a word such as CONTRAWISE can be transposed to form another word. l was, therefore, surprised to find it transposed into WAlNSCOTER ("one who wainscots") in the list of Websterian transposals generated by a digital computer, prepared by Dennis Ritchie of the Bell Telephone Laboratories in New Jersey, in 1973. A check of all major dictionaries, however, showed that the word is a coined one, not a dictionary entry. Neither was WAINSCOTER included in the Normal and Reverse English Word List prepared in 1963 at the University of Pennsylvania, under the direction of A.F. Brown, under a contract with the Air Force Office of Scientific Research – Ritchie's list of transposals had been based on Brown's word list. The word had, apparently, been generated by a computer instructed to add certain suffixes to some of the words, for the purpose of augmenting the Air Force word list with the regular inflectional forms of reasonably common nouns and verbs. The automatic operation of the computer had thrown some fictitious words into Ritchie's transposal list, and WAlNSCOTER was one of them.

That each of the last three words of the chain started with the combining form OVER- was a curiosity. l noticed that one could begin to repeat the chain by continuing it with the words OVER-ACTlNG, OVERTAKlNG, and OVEREATlNG, adding the new letters C, K, and E, and extending the string of consecutive OVER- words to six. Was it possible, l wondered, to form a complete 27-word chain consisting exclusively of OVER- words?

One conspicuous feature of the words forming my chain was the considerable number of bona fide transposals to which they lent themselves. Only some of these transposals were potentially usable, however. Many more were in Webster's Second Edition but not in the Third Edition; capitalized words; words that could be changed only in pairs because both members of the pair were included in the word chain (PLEONASTlC and NEOPLASTlC, for example); words such as RECEPTlONS, followed in the word chain by letter changes without any letter transposal (a tactic prohibited by the contest rules and aesthetically objectionable in any event); and/or words the use of which would have reduced the number of different letters of the alphabet with which the words in the chain ended.

The last of these criteria was significant because the contest rules provided for a breaking of ties in the total score by giving precedence to solutions with larger numbers of ending letters. This tiebreaking mechanism was a poorly conceived one. My chain of ten-letter words used only 8 different ending letters. Since it had taken me only a day or so to construct the chain and some 7 or 8 weeks were allowed for creating a solution, it stood to reason that possibly 50 or 100 contestants would be tied with the score of 260. On the other hand, if these contestants had different word chains, it seemed likely that all of them would use either 7, or 8, or 9 different ending letters – not enough variety to break ties effectively. A somewhat better tiebreaking mechanism would have been using the number of different beginning letters. Had that been the tiebreaking mechanism, l would have replaced

PSALTERION with INTERPOSAL and REFACTIONS with the sexually-titillating FORNICATES, increasing the number of different initial letters to 15. (I could not use INTERPOSAL in the actual solution because it would have decreased the number of different ending letters to only 7.) An even better tiebreaking mechanism would have been ranking tied solutions by the proximity of their first words to the beginning of the alphabet.

Finding all permissible transposals of words entering my chain was essential for several reasons. First, having all possible transposals available enabled me to maximize the number of different ending letters in the chain. Second, it permitted me to sidestep prohibited simple letter changes, such as the RECEPTIONS–RECAPTIONS pair potentially in my chain. Third, it enabled me to insert into the chain words connecting with only one word of the chain, by following the inserted word or words with a transposal of the original word. In the given chain, for instance, I had managed to squeeze CINEPLASTY and NYCTALOPES in between the two members of the transposal pair PLEONASTIC–NEOPLASTIC (which could be turned into a trio by adding POINT LACES, a two-word term prohibited by the contest rules). I had resorted to this ploy several times, but other examples of it had disappeared from the chain in the course of my constructing it – I had been adding words to the chain, and deleting words from the chain, in an uninterrupted process.

I could have expanded my stock of transposals significantly by including in it the plurals of words used as words – the plurals of what are technically referred to as hypostases, citation forms, or quotation nouns. To illustrate, CLARIONETS could be transposed into ALECTRION'S, CROTALINE'S, and LOCARNITE'S; MORENCITES, into ENTOMERIC'S; GIRANDOLES, into NEGROIDAL'S; and BANDOLIERS, into ORDINABLE'S and BOLDERIAN'S. I was, however, reasonably certain that the intent of the Games contest rules was to exclude plurals of hypostases, so I ignored them. The use of such plurals would, in any case, have been most unaesthetic. The word BOLDERIAN'S, incidentally, set a record of sorts by violating four different contest rules: it was a capitalized word, BOLDERIAN appeared only as part of the geological two-word term BOLDERIAN STAGE, the term appeared in Webster's Second Edition but not in the Third Edition, and BOLDERIAN's was a citation noun plural. I could not help wondering whether there might be some other potentially useful word which violated five of the contest rules.

I was equally confident that gerundial plurals were acceptable to the contest sponsor only if their singulars appeared in Webster's Third Edition, in boldface type, identified as nouns or as verbal nouns. I therefore decided to ignore gerundial plurals such as RELOADINGS. Another category of words that I placed on the taboo list consisted of present participles of verbs formed with the prefix A- but not spelled out in the dictionary: A-SOLDERING, for example.

Another interesting characteristic of the word chain, already alluded to, was that 25 of the 27 words used 4 vowels and 6 consonants: an average vowel-consonant ratio in English. The remaining two words, UNPOETICAL and ALECTORIUS, consisted of 5 vowels and 5 consonants each. The latter of these words, ALECTORIUS, is semasiologically fascinating – it designates a magic talisman found in a rooster's gullet. English needs more words like that.

Particularly gratifying from a logological standpoint was the fact that each of the first three words of the chain – UNPOETICAL, PHONETICAL, and PLEONASTIC – was from the domain of language. I could sense a logological destiny of sorts at work here: such an outcome was far too improbable to have occurred purely by chance. In the same vein, although the chain ended with the word OVERTAXING, I did not feel that the task of constructing it had been overtaxing for me.

An examination of the word chain shows that it is heavily laced with literary, technical, and obscure words. Eight of the words included are so uncommon that they are not to be found in any of the collegiate dictionaries; neither can their meanings logically be inferred from related words in the collegiate dictionaries. No one, therefore, could construct such a word chain without making substantial use of both the dictionary established as the contest authority and various kinds of word lists: "ordinary" human beings were out of the running in this contest.

A significant characteristic of the 10-letter-word chain – a characteristic it has in common with most word chains – is its non-reversibility. Starting with the last word of the chain and working backward to its first word produces a set of new letters from which some letters of the alphabet are missing, with others appearing more than once. A reversal of this particular chain produces the letter sequence DLSBZCTFWPEJMLUQANKPCYIOHU. Missing from this sequence are the letters GRVX, while each of the letters CLPU appears twice in the sequence.

After finishing the chain of 10-letter words, I could have started over from scratch, trying to construct another such chain in the hope of producing one using 9 different ending letters. The problem of completing a chain of 10-letter words was, however, difficult enough to make any control over ending letters impossible, so that searching for a better chain would have been a completely random effort. I chose, instead, to attempt a more interesting and more challenging feat: that of constructing a chain of 11-letter words outscoring the complete chain of 10-letter words. A chain of 25 11-letter words, introducing 245 different letters of the alphabet in succession, would suffice, producing a score of 264. A complete chain of 11-letter words would, of course, have a score of 286.

After much effort, I devised a chain of 23 11-letter words, featuring 22 successive different letters of the alphabet, scoring 242, not good enough. This chain (shown on the next page) used all letters of the alphabet except J, K, Q, and Z. Since these are

4 of the 5 least frequent letters in English, my failure to incorpor-
ate them into the chain was understandable enough. There were
very few 11-letter words using these letters, and many of those
that did had to be eliminated from consideration for other reasons:
some of them used two of the difficult letters, both of which could
obviously not be introduced simultaneously, many of them were
replete with other uncommon letters such as B or F, and many
had too many repeat letters (a point to which I shall return later).

If 4 vowels are average for 10-letter words, 11-letter words
ought to average 4.4 vowels apiece. My chain included 13 words
using 4 vowels each and 12 words using 5 vowels each, for an
average of 4.48 vowels per word – just about right and, coincident-
ally, precisely proportional to the average number of vowels (4.074)
in each of the words of my 10-letter-word chain: 4.074 x 1.1 =
4.48.

Word	New Letter	Word	New Letter
PRECAUTIONS	–	PERSONALITY	Y
INSPECTORAL	L	PRATINCOLES	C
REPLICATION	I	EXPLICATORS	X
PERCOLATION	O	XENOPLASTIC	N
PERIODONTAL	D	PACHNOLITES	H
DEFLORATION	F	SPECULATION	U
DEFLORATING	G	CAPSULATION	A
DRAGONFLIES	S	PECULATIONS	E
MANIFOLDERS	M	COPULATIVES	V
WOLFRAMINES	W	CAULOPTERIS	R
SATINFLOWER	T	SUBPETIOLAR	B
PERFLATIONS	P		

Score: 22 x 11 = 242

Beginnings: CDEIMPRSWX
Endings: CGLNRSY

The abstruseness of the words in the new chain was visibly
less than that of the words in the chain of 10-letter words, though
words such as PERFLATIONS, XENOPLASTIC, PACHNOLITES, CAULOP-
TERIS, and SUBPETIOLAR are probably unknown to most persons.
I attributed the somewhat greater familiarity of the words in the
chain to the curious fact that I had started it with a W-word,
WOLFRAMINES, in order to avoid the problem I had experienced
in constructing the 10-letter-word chain. As a result, 7 consecutive
words in the chain have either a W or the closely-related F. Words
including these letters tend to be of Old English origin and less
obscure than words of Latin or Greek origin.

The new chain used only 7 different ending letters – a number
proportional to the 8 letters of the first chain, considering the
fact that the new chain was shorter. It used 10 different beginning
letters, proportionately fewer than the 13 (or 15) different such
letters in the first chain. Like the first chain, the new one includ-
ed both members of transposal pairs (SPECULATION and PECULA-
TIONS; INSPECTORAL and PRATINCOLES). The last word, SUBPETIO-
LAR, could be replaced either by SUBTROPICAL or by SUBPECTORAL:
all three words are substitute-letter transposals of CAULOPTERIS,

although no two of them happen to be transposals of each other. CAULOPTERIS, incidentally, is capitalized only in the first of its two senses, making it eligible under the Games contest rules. Alternative transposals were few and far between, though I noticed that PERIODONTAL could be transposed into DEPLORATION (unusable because the following word, DEFLORATION, is a straight letter-change, not a substitute-letter transposal), and that PERCOLATION could be transposed into NEOTROPICAL (unusable because it is a capitalized word). In addition, PRECAUTIONS could be transposed into EUCATROPINS, a variant of EUCATROPINES purportedly in one of the five references listed in the bibliography at the end of this article – more about these five references a little later. Available further were several citation form plurals, including UNOPERATIC'S for PRECAUTIONS, EXTROPICAL'S for EXPLICATORS, PHONETICAL'S for PACHNOLITES, and UNPOETICAL'S for both SPECULATION and PECULATIONS.

Had my doing so served a useful purpose, I could have added to this meager supply of transpositions a diversity of coinages, creations euphemistically also known as derivative or extralexical terms. For example, PRECAUTIONS transposed into SUPERACTION; REPLICATION, into both ANTIPOLICER (someone who is opposed to the police) aand COREPTILIAN; PERCOLATION, into PRELOCATION; DRAGONFLIES, into the hyphenated word SELF-ADORING; PERFLATIONS, into both FLAREPOINTS and FOREPLAINTS; both SPECULATION and PECULATIONS, into ANTICOUPLES (binary stars in an antimatter universe); and CAULOPTERIS, into OUTCALIPERS (as a verb). Some of these extralexical terms were so natural, in fact, that it was difficult to believe that no dictionary had included them.

Listed by the Fifth Edition of <u>Gould's Medical Dictionary</u>, published in 1941, was QUINASEPTOL (an antiseptic and hemorrhage-arrester). Had the word been eligible under the contest rules, I might have replaced CAPSULATION with it, introducing a Q into the chain – at the expense of losing both the A and the E. Finding some way of reinserting these two letters into the chain would have been relatively easy, but the problem of eliminating one of the two resulting Cs would have been far more difficult to resolve.

Admirable as the chain was in its own inimitable way, it was profoundly unsatisfactory from the standpoint of logological aesthetics, for it was incomplete. The true logologist yearns for the summit, and I longed for a chain of 27 11-letter words, introducing in succession all 26 letters of the alphabet. One way of achieving the seemingly impossible was to relax the rules governing word acceptability. I decided to waive the rules prohibiting capitalized words, hyphenated words, and words from dictionaries other than Webster's Third Edition.

By reducing the number of words conforming to the contest rules from 23 to 21, I succeeded in devising the 27-word chain shown on the next page. PSEUDOLARIX is a capitalized word; ANTITORPEDO is from Webster's Second Edition; UNPOLARISED and JOURNALISED

(variant spellings of UNPOLARIZED and JOURNALIZED) are from the unabridged Random House dictionary; SOUND-ALIKES is from The Second Barnhart Dictionary of New English, published in 1980; and PLEUROTAXIS is from A List of Words Containing No Repeated Letters (Non-Pattern Words) by Jack Levine, published in 1957. The last two of these six words require discussion.

Words	New Letter	Word	New Letters
DEPORTATION	–	SPECULATION	U
TREPIDATION	I	CAPSULATION	A
ANTITORPEDO	O	PECULATIONS	E
PERIODONTAL	L	COPULATIVES	V
DEFLORATION	F	CAULOPTERIS	R
DEFLORATING	G	SUBPETIOLAR	B
DRAGONFLIES	S	PLEUROTAXIS	X
MANIFOLDERS	M	PSEUDOLARIX	D
WOLFRAMINES	W	QUADRIPOLES	Q
SATINFLOWER	T	POULARDIZES	Z
PERFLATIONS	P	UNPOLARISED	N
PERSONALITY	Y	JOURNALISED	J
PRATINCOLES	C	SOUND-ALIKES	K
PACHNOLITES	H		

Score: 26 x 11 = 286

Beginnings: ACDJMPQSTUW
Endings: DGLNORSXY

Judging from the elements of which it consists, the word PLEURO-TAXIS must have one of two meanings:

1. A lateral arrangement, as of leaves along the stem of a plant
2. The sideward orientation movement of a motile organism in response to an external stimulus

Which of these two meanings applies I do not know, for the word is not included in any of the numerous dictionaries at my disposal. I am inclined to believe that the first meaning is the one in question. Levine apparently extracted the word from one of five comparatively obscure sources. I have listed these sources in the bibliography at the end of this article, for the benefit of any reader who wishes to track the word down.

The last word of the chain, SOUND-ALIKES, needs to be SOUND-ALIKER to fulfill the requirement of being a substitute-letter transposal of the word, JOURNALISED, preceding it. I have been unable to find any English word or name consisting of the letters ADEIK-LNORSU - SOUND-ALIKES is my closest approach to the word needed. Actually, the singular of that word, SOUND-ALIKE, should really be SOUNDALIKER under the rules governing English word formation. Since agent nouns are normally formed by adding the suffix -ER or -OR to the word from which they derive, the agent noun formed from the verb "to sound alike" should be SOUNDALIKER. The fact that it is not is attributable to the sloppiness of those who formed the word. I could have chosen to save the word from its illiterate treatment, converting it into the form which good usage requires it to have. Any reader who condemns this tempting rationalization is invited to find a genuine substitute-letter transposal of JOURNAL-

ISED. The obvious letter to replace in that word is the J, and it must be replaced with a K.

Even accepting the imperfection of SOUND-ALIKES, the incorrect final letter of that word is the last of the 297 letters spelling the 27 words of this chain. The final S is, moreover, only one alphabet space away from the letter that it ought to be – the letter R. Since letters can be anywhere from 1 to 13 alphabet spaces apart (when the alphabet is written in the form of a closed, continuous circle), the error involved is of the magnitude 1/13th. Since that error affects only 1/297 of the entire word chain, the error amounts only to 1/13 x 1/297 = 1/3861 of the word chain. Translating that fraction into a percentage, the given word chain is within 0.26% of ultimate perfection. To have come 99.74% of the way only to fail is tantalizing. I really cannot live with such a failure. Can any reader replace SOUND-ALIKES with a transposal of SOUNDALIKER, making the chain perfect? The coined word UNSARODLIKE (not like the sarod, a stringed musical instrument resembling the lute, used in India) is no substitute for a genuine dictionary word or name – even though it is formed in strict analogy to dictionary words such as UNLIZARDLIKE, UNWATERLIKE, and UNSALMONLIKE. Neither would a name gleaned from some telephone directory – ELSA O. DURKIN, or DANIEL O. RUSK, or DALE O. RUSKIN – be a satisfactory solution to the problem.

Those who worship the dictionary as bestowing legitimacy on English words might, of course, ask themselves under what circumstances' words such as UNLIZARDLIKE, UNWATERLIKE, and UNSALMONLIKE could be used. It is easy enough to incorporate these words into sentences: a mushroom is unlizardlike; our fiery sun is unwaterlike; the abominable snowman is unsalmonlike. How probable is it, however, that any rational human being would ever use such sentences? These worshipers might also ask themselves how they would feel if their own name happened to be ELSA O. DURKIN, DANIEL O. RUSK, or DALE O. RUSKIN, but a logologist relegated them to nonexistence by refusing to recognize their names as legitimate English entities. The psychological effect on them could be devastating!

The 27-word chain of 11-letter words has some interesting properties – quite aside from the fact that its score is 286. One of these is its use of 9 different ending letters – D, G, L, N, O, R, S, X, and Y. Contributing to that total are the unusual last letters of ANTITORPEDO and PSEUDOLARIX. The circumstance suggests strongly that a complete chain of 10-letter words using 9 different ending letters may also be possible – though no systematic search for it is possible. An outré quality of the chain is that its last six words include the five least frequent English letters – J, K, Q, X, and Z. This concentration of the uncommon letters in one area makes it seem that words containing those letters have an affinity for each other. Less interesting is the fact that the chain uses only 11 different beginning letters – A, C, D, J, M, P, Q, S, T, U, and W. Greater variety in starting letters should be possible.

The chain introduces both members of a new transposal pair, ANTITORPEDO and DEPORTATION, but does not bring any new transposal alternatives with it — not even hypostasis plurals — for a final insult of sorts. As was the case in my first chain of 11-letter words, the link MANIFOLDERS comes within one letter of my favorite logological word, PALINDROMES. I had hoped to confer true immortality on the chain by weaving that word into it. Alas, such glory was not meant to be!

One most remarkable feature of all the word chains is the prominent role that nonpattern words play in them: words using no letter of the alphabet more than once. In the chain of ten-letter words, 23 of the 27 words are nonpattern words; in the chain of eleven-letter words, 18 of the 23 words are nonpattern. Finally, in the complete eleven-letter word chain, if SOUNDALIKER is used as the final word, 21 of the 27 words are nonpatterns. Why?

I have formulated a hypothesis to account for this phenomenon. According to that hypothesis, words without repeated letters — nonpattern words — constitute a kind of mainstream in English. As words deviate from that mainstream, using progressively larger numbers of repeat letters, they fall into isolated pockets of the language, pockets in which they meet only a limited number of other words. It follows that words with repeat letters are much less likely to connect with other words than are those words in the mainstream of the language, encountering a much larger number of other words. Does any reader have some other hypothesis to offer?

The Word Marathon contest has, in summary, posed a series of logologically interesting problems. I challenge readers to find solutions to these problems:

1. Construct a chain of 10-letter words using more than 8 different final letters.
2. Construct such a chain using more than 15 different beginning letters.
3. Construct such a chain starting with a word much closer to the beginning of the alphabet than is the word PECULATION — try for a word beginning with the letter A.
4. Find the word PLEUROTAXIS and determine what it means.
5. Replace the word SOUNDALIKES in my chain of 11-letter words with one consisting of the letters AEDIKLNORSU — or find some other substitute-letter transposal of JOURNALISED.
6. Construct a chain of 11-letter words consisting exclusively of words in Webster's Second and Third Editions.
7. Construct such a chain using more than 9 different ending letters.
8. Construct such a chain using more than 11 different beginning letters.
9. Construct such a chain starting with a word closer to the beginning of the alphabet than the word ANTITORPEDO — which can be interchanged with the word DEPORTATION nominally starting the chain.

10. Construct the longest possible chain of 12-letter words, using only Webster's Third Edition.
11. Construct a complete chain of 12-letter words, using any dictionaries of your choice, for a total score of 312.
12. Formulate a hypothesis of your own as to why most of the words comprising such word chains are nonpattern words, with the remainder usually including only one repeat letter.
13. Construct a complete chain of 10- or 11-letter words which is reversible, producing the complete alphabet of letters in either direction.

Succeed in some of these endeavors, and the world will be your oyster - see Shakespeare's The Merry Wives of Windsor, Act 11, scene ii, line 2 for corroboration!

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EVERYDAY PHRASES

This is the title of a book by Neil Ewart, published in 1983 by Blandford Press in Dorset and distributed in the U.S. by Sterling Books for $9.95. It contains rather detailed discussions (from one-fifth of a page to nearly three pages) of the origins and meanings of more than 400 common phrases such as What a Way to Run a Railway, To Work Like a Navvy, An Aunt Sally, Horses for Courses, To Get the Sack, Your Majesty, His Name is Mud, To Get Off One's Hobby Horse, etc. As these examples suggest, there is a very English flavor to the selection of phrases for inclusion, which sets this book apart from the plethora of American etymologies. Recommended for Anglophiles.