ON THE INTER(E)STATE

PHILIP M. COHEN
Aliquippa, Pennsylvania

Three Word Ways articles have been written by Dmitri Borgmann (February and May 1977) and Pamela Brang (August 1977) to support the proposition that 'all words are interesting' from a logological standpoint. As noted in the May and August Colloquies, the results left something to be desired. For example, Borgmann's efforts included two transposals and a substitute-letter transposal to nonexistent words or names; a reference to a 'dictionary combination' (a sequence of words occurring somewhere in the text of a dictionary, no more worth mention than any sequence from any other text); and a reference to a different word ('subcontinent' was identified as the noun base of 'subcontinental' which is interesting because it contains AEIOU in reverse order, but isn't the object to find a property of 'subcontinent' itself?).

Frequently, the property cited is too common to make the word 'interesting'. For example, Borgmann calls 'pseudofeverishly' a halfway word because it contains half as many letters as the alphabet. But Levine's pattern word lists give 611, 506 and 523 14-letter, 15-letter and 16-letter words with this property, and a reasonable extrapolation to longer words suggests that at least 3000 exist in total -- no great distinction. Similarly, three of the twenty words Borgmann examines are called 'interesting' because they are substitute-letter transposals of other words, yet all words in his article but one (psychedelic) have this property. (Some hard-to-find substitute-letter transposals are conjugate/autogenic, foliated/petaloid, Hail Mary/hairmeal, indemnity/medianity, layoff/floaty, revolved/overlade, and subcontinent/unconsistent.) Shiftgrams (shift the letters of a word along the alphabet, then transpose to form a new word) are not all that rare, either; as shown by Tom Pulliam in the February 1980 Word Ways. In a list of five-letter words from the 1970 Merriam-Webster Pocket Dictionary, I took words from the head of every third column. Of the 16 so selected, I found shiftgrams for all but 'yacht'; fourteen had two or more!

A property is particularly likely to be common if it is constructed rather than discovered. For example, as National Puzzlers' League members know, a remarkable number of words and phrases can be anagrammed (transposed into directly apposite phrases). If we allow transposal to any word sequence, apposite or not, as Borgmann does with 'pseudofeverishly' and Brang with 'embolisms', it is the untransposable words that are in the minority (any word of six or more letters in their articles can be transposed with equal facility). In another construction, Borgmann exhibited four word squares, each containing the

word 'desk' in a different position, and each also containing a transposal of 'desk' (either 'keds' or 'sked'). Taking five words at random from the MWPD, I succeeded in constructing similar word square sets for three (although I needed the obsolete First Edition word 'spac' in one square). Using properties like these, it is not hard at all to prove that nearly all words are 'interesting'.

Is there a way to do such studies without succumbing to the urge to flesh out sparse results with unreasonable claims? Ed Wolpow has a good suggestion: for each member of a group (such as chemical elements or Presidential surnames) try to find a logological property of interest that is unique within that group. For small groups this is trivial; among Columbus's ships, Niña is shortest, Pinta the only one that can be successively curtailed (Pinta-pint-pin-pi-p), and Santa Maria the longest and only two-word one. He proposed the group of state names, which are numerous enough to make the search for extreme cases interesting, and which have well-varied forms (unlike the elements, for example, which mostly end in -ium).

In the list of states below, a wide variety of criteria for 'interest' have been devised; however, there are still a number of states which do not have any entries, an invitation for reader contributions. Many of these criteria, particularly the numerical ones, will probably be considered too esoteric; readers are more likely to consider a state 'interesting' if the rationale is simple to state and comprehend. Particularly obscure criteria are asterisked and defined more fully at the end of the article.

I have made my task more difficult with an added requirement: any extremal property shared in equal measure by two or more states is not allowed. For example, the shortest state name is OHIO, UTAH and IOWA, so none can claim uniqueness in this regard. More subtly, NEW JERSEY is the only state containing a J, but ARIZONA can match this claim with Z, so neither state is the only one with a unique letter. Clearly, uniqueness is unworkable in large groups; perhaps one should instead call a word 'interesting' if it possesses a property manifested in at least as extreme a form by (say) only one per cent of the other words in the group.

I am much indebted to the late Dave Silverman, Ed Wolpow, Mary and Harry Hazard and the editor for various properties given below.

ALABAMA -first state in dictionary
-all letters in first half of alphabet
-smallest letter-sum (1+12+1+2+1+13+1=31)
-smallest letter-product (312)
-least dense state ((1+12+1+2+1+13+1)/7=4.43)
-first state in anagrammatic order (AAAABLM)
-last state in anagrammatic order, reversing the alphabet (MLBAAAA)
ALASKA -only state that is a meld of two others (ALabama, nebrASKA)
ARIZONA -first state in anagrammatic order, reversing the alphabet (ZRONIAA)

ARKANSAS -only one-word state with another state buried in it
CALIFORNIA
COLORADO -best-balanced state (normalized center of gravity of .4993)*
CONNECTICUT
DELAWARE
FLORIDA -least zigzaggy state (.9667)*
GEORGIA -only state containing both an odd-lettered word (eri) and an even-lettered one (goga), both in NI2
HAWAII -state with longest sequence of final vowels
-longest state name written entirely with vertically-symmetric letters (AHIMOTUVWXY)
IDAHO -end-heaviest state (normalized center of gravity of .5721)*
ILLINOIS -minimum average spread (4)*
-only state forming a clockword (illision)*
INDIANA
IOWA -only numerical tautonym (9+15=23+1)
-only state with all odd-numbered letters of the alphabet
KANSAS -only state buried in another state (arKANSAS)
KENTUCKY -highest percentage of unique bigrams (5 out of 7: ke, tu, uc, ck, ky in no other states)
-last state in reverse-alphabetical dictionary (YKCUTNEK)
LOUISIANA -only state with three consecutive internal vowels
MAINE -only one-syllable state
-only state not embeddable in a state name chain (its first letter ends no other state, its last letter begins no other state)
-only state curtailable to a single letter (Maine-main-mai-ma-m)
-only state forming a homonym (Maine-main)
-shortest state name containing at least one letter in common with every other state
-fewest bits in International Morse Code (--/·-/··/-·/·)
MARYLAND
MASSACHUSETTS -most consonants (9)
-largest letter-sum (13+1+19+19+1+3+8+21+19+5+20+20+19=168)
-longest one-word state name
-largest number of unique bigrams (ac,hu,us,et,tt,ts)
-state with longest sequence of final consonants
-most matches between name and anagrammatically arranged name — mAssachuSeTTs / aAcehmssSsTTu
MICHIGAN -only square letter-sum (13+9+3+8+9+7+1+14=64)
MINNESOTA
MISSISSIPPI -longest internal palindrome (mISSISSIppi)
-most unique letter-distribution (4421 - four other NI words with this letter-distribution: Wallawallas, kinnikinnic, densenesses, tenseness-
-smallest ratio of distinct letters to total letters (4/11) — es
-longest univocalic (using only one vowel)
-largest letter-product (2,845,560,077,568)
-only internal tautonym (mISSISSippi)
-rarest 'most common' letter (etaoInSrhldcuMfP...)
MISSOURI -last state in anagrammatic order (IIMORSSU)
MONTANA -longest partial overlap with a preceding state (verMONTana)

NEBRASKA
NEVADA -first state in reverse-alphabetical dictionary (ADAVEN)
-start-heaviest state (normalized center of gravity of .3647)*
NEW HAMPSHIRE -longest sequence of consonants in a word (MPSH)
NEW JERSEY
NEW MEXICO
NEW YORK -most consonant-dense state (5 out of 7)
-most dense state ((14+5+23+25+15+18+11)/7=15.857)
NORTH CAROLINA
NORTH DAKOTA
OHIO -fewest different letters
-only state name written with horizontally-symmetric letters (BCDEHIKOX)
-shortest alphabetic span (H to O, eight letters)
-most isolated state (no letter in common with 12 other states: AL AK AR DE KS KY MD NE NV NJ TN TX)
OKLAHOMA
OREGON
PENNSYLVANIA -longest state with total alphabetic disorder

pennsylvania	have no
aaeilnnnpsvy	match

RHODE ISLAND -only two-word state with both words unique
SOUTH CAROLINA -most bits in International Morse Code (36)
-most consecutive alphabetic letters (SoUTh caRolina)
SOUTH DAKOTA
TENNESSEE -most different doubled letters (N,S,E)
-most common 'rarest' letter (ETaoiNS...)
TEXAS -highest average spread and zigzagginess (both 18.75)*
UTAH -smallest center of gravity (1.92)*
VERMONT -longest partial overlap with a following state (verMONTana)
VIRGINIA
WASHINGTON -contains all letters used in three other states (Hawaii, Ohio, Iowa)
WEST VIRGINIA
WISCONSIN -longest zigzag word*
WYOMING -last state in dictionary

center of gravity = sum of (letter weight)(letter position)/sum of letter weights (UTAH: (21·1+20·2+1·3+8·4)/(21+20+1+8)=1.92)
normalized center of gravity = center of gravity/(word length+1), equal to 0.5 in palindromes (UTAH: 1.92/5=.384)
spread = sum of a word's letter-differences (UTAH: (21-20)+(20-1)+(8-1)=27)
average spread = spread/(word length-1) (UTAH: 27/3=9)
zigzag = a trigram with second letter later in alphabet than the first, and third letter earlier than the second (as AML), or the reverse (as TRX)
zigzagginess = (average spread)(number of zigzags)/(word length-2) (UTAH: 9·1/2 = 4.5)
clockword = arrange the letters of a word in a circle, and spell out another word taking these letters in sequence (direct or reverse)