LETTER-FREQUENCIES IN CAR NAMES

A. ROSS ECKLER
Morristown, New Jersey

At a regional meeting of the National Puzzlers' League held at Kingston, New Jersey in November 1979, Arthur K. Harris ('Hart King') presented a word game in which participants were asked to add C, A, and R to groups of letters and rearrange these to form car names (for example, the letters EELT, combined with CAR, lead to the Buick ELECTRA). The purpose of this article is to gauge the extent car namers may have favored these three letters; do they appear more often than in a random selection of dictionary words?

The probability that an English word will contain the letters C, A, and R (in any order) is obviously a function of word length -- the longer the word, the greater this probability will be. To pin this down, I counted the fraction of such words given in boldface type in the Merriam-Webster Pocket Dictionary:

<table>
<thead>
<tr>
<th>Letters</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Words</td>
<td>541</td>
<td>1843</td>
<td>2798</td>
<td>4056</td>
<td>4591</td>
<td>3979</td>
</tr>
<tr>
<td>CAR-words</td>
<td>2.</td>
<td>14</td>
<td>71</td>
<td>142</td>
<td>254</td>
<td>424</td>
</tr>
<tr>
<td>Fraction</td>
<td>0.0037</td>
<td>0.0076</td>
<td>0.025</td>
<td>0.035</td>
<td>0.055</td>
<td>0.107</td>
</tr>
</tbody>
</table>

I next assembled the following collection of 112 car names, reflecting all U.S. and foreign makes produced between 1973 and 1979, common enough to be listed in the April 1979 Consumer Reports magazine (the annual issue evaluating the quality of new and used cars). These are listed below, with names containing CAR on the first line and those not containing CAR on the second:

3 Fox (1)
4 Opel, Colt, Omni, Nova, Vega, Dart, Fury (7)
5 Pacer, Capri, Le Car (3) Monza, Champ, Pinto, Civic, Arrow, Aspen, Omega, Delta, Regal, Scout, Comet, Isuzu, Manta, Astre (14)
6 Accord, Corona, Cougar, Camaro (4) Spirit, Strada, Fiesta, Bobcat, Celica, Malibu, Rabbit, Volare, Zephyr, Le Mans, Dasher, Impala, Magnum, Hornet, Blazer, Monaco, Beetle, Duster, Polara, Custom, Torino (21)
7 Corolla, Monarch, Cordoba, Charger, Electra, Caprice (6) Skyhawk, Sapporo, Horizon, Sunbird, Concord, Century, Skylark, Le Baron, Granada, Cutlass, Phoenix, Le Sabre, St. Regis,
Newport, Marquis, Mustang, Riviera, De Ville, Seville, Gremlin, Matador, Coronet, Galaxie, Montego, Valiant, Ventura, Grand Am (27)

8 Maverick (1)
Chevette, Starfire, Scirocco, Chevelle, Monterey, Diplomat, Fairmont, Catalina, Corvette, Firebird, Eldorado, Toronado, Suburban, Sportvan (14)

9 New Yorker, Grand Prix, Sportsman, Wagoner, Cherokee, Satellite (6)

10 Challenger (1)
Bonneville, Monte Carlo, Ambassador, Grandville, Versailles (5)

11 Thunderbird, Continental (2)

I omitted all names which were meaningless combinations of numbers or letters, such as the Ford LTD or the Oldsmobile 98.

Using the probabilities developed above, it is easy to estimate the expected number of car names containing C, A, and R if these names come from the same population as English words:

Expected number = 1(.0037) + 7(.0076) + 17(.025) + ... + 2(.16) = 6.1

The actual number of CAR car names is 15; with the aid of the Poisson distribution function, one can calculate the probability that 15 or more CARs would occur in a random set of dictionary words -- only 0.00161. Rather than believe such a rare event has occurred by chance, it seems likely that car names do prefer these letters to some extent.

If one repeats this analysis using only the letter C, the corresponding expected number is 28.1, and the number of car names is 36; there is still an excess, but it is far less dramatic (the chance of 36 or more occurring is equal to 0.08). One can speculate that the letter C is an important contributor; does the hard, abrupt sound of this letter subconsciously denote power and invincibility, as contrasted with the more liquid or sibilant consonants? Alas, there are numerous exceptions to this hypothesis: Pacer, Chevelle, Charger, Century, Chevette, Challenger, Champ, Caprice, Scirocco, Civic and Celica!