TOWARDS A MORE LOGICAL KEYBOARD

ANIL
Perth, Australia

As I age I notice more and more how much of touch typing involves my slowly failing left hand. For example, the left hand covers four more letters than the right, and the three most frequent letters (E A T) and seven of the top twelve (+ R S D C) are on the left. As well, only one of the top seven (A) and five of the top thirteen (+ S D H L) are on the central 'default' row, three of which (A S L) use the unathletic third or fourth fingers. None of the top eight letters and two of the least five (J and K) occupy the best position, the right-hand central row. Etc.

I'd like to reopen the idea of designing a keyboard "closer to the fingers' desire". There'd be a lot of resistance to anything so new, requiring major relearning and retooling. But maybe not as much as that toward the metric system, which has after all finally been adopted in every country I know of except the stubborn old US of A. Anyhow, I shall now piss into that prevailing wind by proposing a new keyboard. (Apologies to southpaws, who will lose their current advantage if I have my way.) The working model below is not definitive, merely a starting point for discussion, pending a lot of testing and more thought and research into the two main factors involved—letter frequencies, including pairings, and the digital dexterity (or sinisterity!) of different fingers.

For letter frequencies see my "Frequency Heterograms" article in the February 2006 issue of Word Ways (p.39). The above notes are not based on the Linotype (etaoin shrdlu) frequence but on that of the Cambridge Encyclopedia (David Crystal, *Cambridge Encyclopedia of the English Language*, 1995) Crystal also gives adjacent letter frequencies, which are very germane to the keyboard design. The two dozen most frequent bigrams in the whole 1.5 million words of the Cambridge Encyclopedia, in order, are: IN, TH, HE, AN, ER, RE, ON, ND, OR, ES, ED, AL, AT, EN, TE, TI, AR, ST, OF, IS, IT, RI, NT, RO, the first (IN) being 3.2 times more frequent than the last (RO). I have assigned these and as many other frequent pairs as possible to different fingers, preferably on opposite halves of the typewriter.

As to the digits, I can only use subjective criteria. My rating of the fingers for athleticism would run: R1 L1=R2 L2 R4 L4=R3 L3. As to moves I rank none (default position, underlined) way ahead of index fingers inward 2nd, up one row 3rd, down one row 4th, and up two 5th. It's also important for speed typing that all eight fingers be utilised, so I haven't limited fingers 3 and 4 to the less frequent letters only. I've put all nine of the most frequent letters on the central row.

Here is my tentative keyboard alphabet based on the above considerations.

Q	X	B	H	Y		M	U	P	W	K
I	N	R	A	S		L	E	T	O	-
J	Z	V	D	C		G	F	-	-	-

The rest of the keyboard, ignored here, should be rethought as well. A frequency count of every key on the keyboard–letters, punctuation, numerals, symbols, commands–would be useful. Has

there ever been such a study? For starters, replace the semicolon key with a frequent letter or with the comma or the dot (period, full stop), swap positions of parentheses and square brackets– or make the latter the shift keys of the former, and maybe split the space bar so a thumb covers comma, dot, shift or return, whichever is most frequent. Dare we upset the impeccable logic of having the digits in numerical order on the top row, instead placing them finger-wisely according to frequency? Benford's Law says numeral frequency isn't random but follows numerical order, 1 being most and 9 least frequent, but it says nothing about their frequencies in text relative to the letters etc. Is 0 more frequent than 1, being so often used in round numbers and in multiples? Should 0's shift key be 000? And how about a separate key for "the", "in" and "and"? Notice how heavily they weigh on the above bigram frequencies. What characters could be eliminated to make room for them without enlarging the keyboard? I'd nominate these: ` ~ ^ { }. *(No, no, not the dot!)*

I hope readers will give this some thought and present additional ideas or counter-suggestions. And maybe some information on the history and why of the current keyboard arrangement.

The logological interest of this musement, aside from the fact that we all use keyboards, is that we often consider words in relation to which half of the keyboard they fall on, or which row. In that context, here are some challenges. Find:

- the longest 'nervous' word–which jumps to a different row after each letter;
- the longest 'indecisive' word–which switches from side to side after each letter;
- the longest 'neurotic' word–which jumps to a different row *and* a different side after each letter;
- the longest 'straight' word–which occurs on a single row (This I think is an old problem.);
- which of these four classes contains the most words.

I mean, of course, on the existing keyboard. On my keyboard, you could probably find longer indecisive and straight words but not do as well on nervous or neurotic words. My central row would yield far more words that the old, my top row far fewer and none of significant length. Both old and new keyboards have no words in the bottom row.