

Avoiding Alliterative Confusion Within B • C • D • E • G • P • D • V • Z

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On two occasions in the last few weeks, I was dictated web site addresses with confusing alliterative letters. The Internet does not tolerate spelling errors, so a discussion of phonic confusion is warranted.

This is a long-recognized problem. Thus, a **phonic alphabet** (“Alpha” for A, “Beta” for B, etc.) is used extensively in ham radio communication. Phonics is less used in telephone conversations; one does not need a license to answer questions over the phone. The phonic alphabet is a known solution, so here I will point out the less-known features of alliterative letters.

The two tables below are from my [master’s thesis](#) where their source is cited. While there is the possibility of confusion with all letters, the alliterative set illustrated has many more errors. Besides the B-C-D-E-G-P-D-V-Z set, shown, there are A-J-K and M-N sets. The A-F-H-L-N-Q-R-W-Y set, shown in the lower table, are discordant with each other, but A and N fall into other alliterative sets. If one wants to avoid homophones that confuse, one might want to choose letters for Internet addresses from sets of letters with lower confusion. There are twelve remaining letters that do not fall into phonically confusing sets; namely: F, H, I, L, O, Q, R, S, U, W, X, and Y; plus 1 thru 9. Note, solutions are not provided here but knowledge and awareness of a common problem are elaborated.

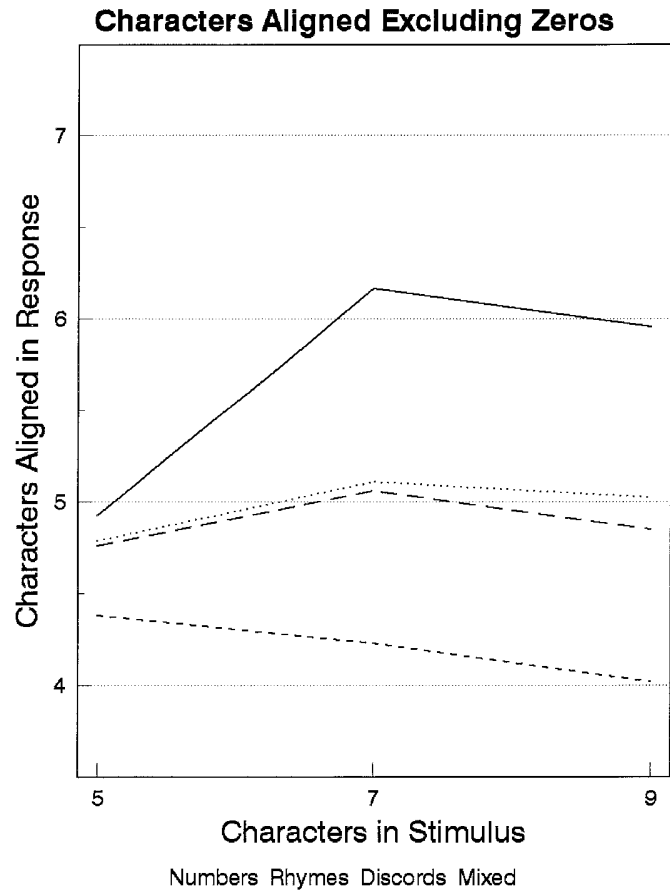
Confusion Matrix for Alliterative Letters

		Stimulus								
		B	C	D	E	G	P	T	V	Z
R	B		171	196	107	142	75	84	168	25
e	C	32		19	24	19	35	42	20	3
s	D	125	71		166	104	34	43	105	11
p	E	271	195	252		208	111	163	119	6
o	G	40	22	47	34		18	12	37	1
n	P	162	350	201	172	167		505	91	31
s	T	143	232	158	124	116	281		50	10
e	V	122	61	147	55	135	34	22		15
s	Z	1	5	3	4	4	3	0	6	

Confusion Matrix for Discordant Letters

		Stimulus								
		A	F	H	L	N	Q	R	W	Y
R	A		9	77	134	126	8	23	79	21
e	F	10		55	25	8	0	4	4	5
s	H	27	26		7	15	16	4	14	1
p	L	69	16	9		25	6	57	32	61
o	N	234	32	40	51		6	40	28	47
n	Q	3	0	16	1	6		1	5	3
s	R	13	14	4	136	12	9		7	162
e	W	4	9	4	6	11	3	2		14
s	Y	7	7	3	62	11	2	32	2	

These confusions also carry over to visual presentation of letters, because there is an *auditory* component to how humans encode items into short-term memory. My [master's thesis](#) explored this by displaying spans of numbers, mixed numbers and letters, plus alliterative and discordant letters. The following figure illustrates the effects of different *content* in the spans on the number of characters that are accurately remembered.



The content of each set are:

- _____ Numbers: { 1, 2, 3, 4, 5, 6, 7, 8, 9 }
- Discords: { A, F, H, L, N, Q, R, W, Y }
- - - - - Mixed: { 2, 4, 7, 9, J, K, M, S, X }
- - - - - Rhymes: { B, C, D, E, G, P, T, V, Z }

The graphs illustrate that the span remembered for numbers is longer than for alliterative letters, with discordant letters and mixed sets in between.

This work ties into the classic article by [George Miller](#), published in 1956, on the span of numbers that can be remembered as seven digits. My research extended his coverage by (1) using a computer to present the spans to students and to have them type in their response after a short delay; and (2) it focused on the variable results due to *content* of the spans.

The intent here is to make the reader more aware of a condition in human commerce that is often obvious—but ignored by people that can do something to correct the situation. I have pointed out wrinkles to people and got acknowledgment, even agreement that it is a problem, where nothing was done to correct the situation. These are everyday *annoyances* that most of us learn to live with.

Thus, it is vicariously gratifying when a radio personality points out bad service he received and names names. Years ago, a newspaper columnist took an identified exterminator to task, in his column. I am not a celebrity with air time or newspaper space, but I do have a web site. I do not, however, wish to vent about a particular purveyor of problems that may be *easily* correctable. My facilitation is to spell my name for people as R-A-B, as in boy-S-T-E- J, as in John, N, E, K, as in Clem Kadiddlehopper. Before starting this, it was possible to spend several seconds going forth between “j” and “k” with a clerk.

A similar confusion occurs when I get calls from my large medical establishment (which does not need to be named), where I have many contacts. It has one outside number, and they record on voice-mail a specific call-back number—usually in a thick accent. Each of the three digits for the Area Code and Exchange, which are well known, are clearly given. Then there is a rush through the final four digits, with a tendency to slur the last digit or two.

Awareness is the intent of much of my writing and not an expectation that my opinion would be readily embraced by people with authority to institute change. This is not a self-esteem issue, but a realization that those with power can ignore commoner’s suggestions. They may, however, cogitate on a issue if it is presented in an impersonal source, such as this article.

Difficulties exist in human converse for which we can readily compensate with increased *awareness* that needs willing personal or top-down initiative to make changes. The challenge is to penetrate the human wall of defensiveness that tends to filter out any suggestion as an attack on how they conduct their job.

It is not expected that every detail of a manager’s purview will be monitored. Few corporate executives call their organization’s help desk or get phoned with reminder calls form their rank-and-file.

The examples that I gave are not catastrophic and can generally be resolved by the customer or client. They just add to the annoying hassles of daily life.