

## A QUARREL WE CAN SETTLE

N. David Mermin

Now that the standard model has been with us long enough to have become part of the commonplace wisdom of schoolchildren, it is high time to face head on the contentious issue of how properly to pronounce the word *quark*. Although only a condensed matter theorist, I am proud to contribute what follows as a low-cost contribution to straightening out one of the annoying loose ends, others of which may have to wait considerably longer for their resolution.

As a rule, only native speakers of English hold passionate opinions on how *quark* is to be pronounced, and that is as it should be. One of the glories of the English tongue is that its comprehensibility is undiminished and its beauty even enhanced by the systematic mispronunciation of vowel sounds by non-native speakers. But it is a sad and ugly business when the wrong sounds emerge sporadically from the mouths of natives. Quite aside from such aesthetic considerations, it is surely the duty of us native speakers of English to set appropriate standards that the others, if they so desire, may strive to attain. Nowhere is there more need for clarification than in the hotly disputed case of *quark*.

The opinion of the majority is clear: *Quark* is pronounced to rhyme with *pork*. There is, however, a vocal and embittered minority, biting in its rejection of the prevailing view, whose members insist on pronouncing the word to rhyme with *park*. It is often argued in defense of this practice that the word is taken from the German name for a horrible yogurt-like fluid, the proper pronunciation of which unquestionably comes closer to rhyming with the English *park* than it does with *pork*. This minority argument, however, is en-

tirely spurious. If one were to adopt the German pronunciation consistently one could indeed rhyme *quark* with *park*, but only at the price of having to say *kvark*, which no native speaker of English has ever been known to advocate.

Clearly the decision must be made from a study of English usage and, I would maintain, either on the basis of the Irish variety of English, out of respect for the man who imported the word from German, or on the basis of the American variety, in deference to the man who transported it into physics. The fact that the international enterprise of physics is, on the whole (and alas for it!), not conducted in the Irish version of English and the fact that this column is appearing in an American magazine decisively tip the balance toward the latter approach, though I would be delighted to learn the views of anyone possessing (as I do not) a fine command of the Irish vowel.

For many years it was obvious to me that the majority view was correct, on the following grounds: Search through the dictionary for any word containing *ar* preceded by a *w* sound (including the *w* sound in *wh* or *qu*). Invariably you will find that such a word rhymes with *pork*. I cite *quart*, *wart*, *ward*, *war*, *warp*, *warm*, *dwarf*, *wharf*, *quarter*, *thwart*. . . . To be sure, if the *r* is doubled there is a possibility of variation, as in *quarrel* or *quarry*, but even there the variation exists only as an alternative to the undiluted *pork* sound. (There are some truly marvelous things to be said about *arr* words, which a Reference Frame column is too brief to contain. I merely note that the methodology developed below is powerful enough to deal with them, lending further support to the conclusions reached here.) So we have a rule that I name after its simplest example:

*The war rule:* In American English *ar* preceded by any kind of *w* sound is invariably pronounced like

the *or* in *pork*.

I lived happily under the *war* rule, quarking away with the best of them, always rhyming it with *pork*, for many years. Then one day I was rudely awakened from my customary lecture-room stupor by a speaker of the *park* persuasion who suddenly abandoned his transparencies to launch a scornful attack on the practice of pronouncing *quark* to rhyme with *pork*. Instantly awake and in full possession of my rested wits, I began to conjure up an enormous list of *war* words with which to demolish him during the question period, when a shocking thought entered my head:

Search through the dictionary for any word containing *ar* followed by a *k* sound, and it invariably rhymes with *park*.

How could I have failed to notice this for so long? In addition to *park* itself we have the bare *ark*, along with *bark*, *hark*, *lark*, *mark*, *embark*, *spark*, *stark*, *shark*, *snark*. . . . I had clearly overlooked:

*The ark rule:* In American English *ar* followed by any kind of *k* sound is invariably pronounced like the *ar* in *park*.

Cognitive dissonance! How is one to treat a word that falls into both categories at once? Which rule takes precedence? No doubt there are principles of linguistics that would settle this issue, but it is easier simply to find an example. How do people actually pronounce a *war* word that is also an *ark* word? Wrack your brain for examples! I tried for months, without success. Then one sunny day, while raking grass cuttings, it suddenly came to me: *bulwark*!

A wave of joy passed over me. The issue could be settled empirically. But my joy was short-lived. "How," I introspected, "do you pronounce that word?"

"Rhymes with *pork*," I answered confidently.

"No," I reconsidered. "Rhymes with *park*."

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## REFERENCE FRAME

Or could it rhyme with *perk* and therefore, God help us, with *quirk*? Could *quark* be a homophone of *quirk*? Can you imagine the announcement coming triumphantly out of Geneva that they had, at long last, discovered the "top quirk"?

Not being a nautical man, the fact is I may never in my life have uttered the word *bulwark* or heard it spoken. To be sure, it is used metaphorically with some regularity, but more often than not you come upon it only in writing. Dictionaries proved to be of no help, offering a range of acceptable vowel sounds for *bulwark*, given in an ordering that no two agreed upon. My research seemed to have reached a dead end.

Then, just a few weeks ago, coming upon a group of graduate students engaged in unproductive pursuits, I attempted to jar them out of their idleness with a challenge to find a *war* word that was also an *ark* word. Within 24 hours I was presented with *Newark*. (I digress to remark that one of the joys of Cornell is that the graduate students do not let you down.) Could the fate of the standard model then indeed hinge on the existence of a top quirk? No, I realized almost at once, in *Newark* the *ark* is unaccented, which disqualifies it as an example. Proudly and professorially I trundled out *bulwark* to illustrate what they should have been looking for, only to realize that it suffered from exactly the same defect.

To this day I have found no *ark* word that is also a *war* word with the accent on the *ar*. I appeal to you, dear reader, to wrack your brains for a specimen. Until one turns up I am working from the hypothesis that not only are quarks the fundamental building blocks of hadrons, but, perhaps even more remarkably, *quark* is the only *war* word that is also an *ark* word. Have I therefore given up?

Hardly!

Consider the word *cart*. It rhymes with *art*. So do *chart*, *dart*, *fart*, *hart*, *mart*, *part*, *smart*, *start* and *tart*. But not *wart*. Better still,

not *quart*! Thus if we replace *k* with *t* we find two examples of the fact that when there is a clash, the *war* rule is more powerful than the *art* rule.

"Big deal," you may say, if you belong to the *ark* school, "*k* is not *t*." "Well," say I, "try another case." Consider *farm*. It rhymes with *arm*. So do *harm*, *alarm* and (appropriately enough) *charm*. But not *warm* and not *swarm*. The *war* rule is more powerful than the *arm* rule.

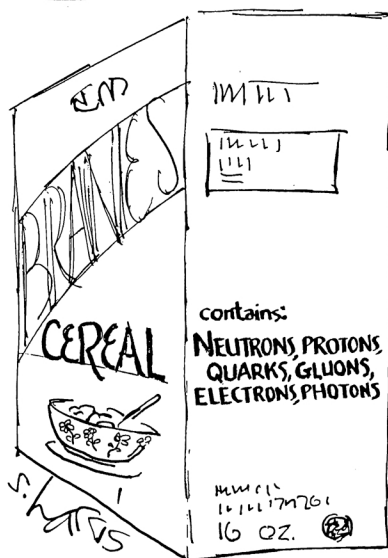
The harder you work on it, the clearer the trend becomes: *bard*, *card*, *hard*, *lard*, *chard* and *shard*, but *ward*; *carp*, *sharp* and *tarp*, but *war*; *barf*, but *wharf*; *barn*, but *warn*.

I rest my case. No rational person can deny that the data point overwhelmingly to:

**The warx rule:** Given any consonant *x*, the vowel in all accented *arx* syllables is pronounced the same *except* when a *w* sound (*w*, *wh* or *qu*) precedes such a syllable, in which case the vowel is pronounced as in *war*.

It happens (unless, dear reader, you can rise to my challenge) that when *x = k* the *warx* rule operates only through the single example of *quark*. But should particle physicists, of all people, dedicated in their bones to the extraction of order and pattern out of the subatomic chaos, violate their deeply held and altogether admirable principles in their linguistic practices? Of course not! In the United States of America, *quark*, I must insist, rhymes with *pork*, not *park*. ■

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