

A paean to the keyboard

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I have really lousy manual dexterity, and generally consider myself to be a klutz. But I have one trick in my favor: I can type 70 words per minute—blindfolded. If an average word is six characters, then that means that I'm precisely pressing seven keys per second. If you're a slowpoke at maybe 30 wpm, that's still around three keys per second. [I learned to touch type by just forcing myself to not look, by typing with a t-shirt draped over my hands and keyboard for a few days. You know where the keys are, and it's just a question of breaking the habit of watching yourself.]

Apart from playing musical instruments, there's not much that a large number of people are expected to do so dextrously, with such precision. In fact, keyboards outdo our musical instruments: on a guitar, the 30 wpm pace of circa 200 sequential gestures per minute is on its way to speed metal territory.

Meanwhile, 70 words per minute on a keyboard is reasonably fast, but not amazing. But mousing in 70 words per minute, or successfully dictating 70 wpm to a speech recognizer, or tapping 70 wpm on a telephone pad, or getting character-recognition software to read pen strokes at 70 wpm, would be impressive indeed. The keyboard is the fastest input method we have in the Western world, and has been more-or-less since its earliest days.

How about a concrete, navel-gazing example: when I first wrote this paragraph, I'd written 1,600 words for this (I write a lot, then heavily edit—it's now 729 words). That gives you an idea of how long I take to write these things: 1,600 words is 22 minutes of straight typing, and on a device with no keyboard, the time constraints of spending an hour or two just entering letters would make this simply impossible. Without the keyboard, I wouldn't be here.

Here's another interesting thing about keyboards: they have keys. In the sci-fi movies, people are always playing the air: their keyboards are just a space where they gesture, while the musician playing softly in the corner (future workplaces all have musicians) is waving his hands around in a glowing frame that just suggests a harp. It's not really sci-fi: attempts appear here and there for keyboards that don't have keys. [I even tried a laser-harp at the science museum the other day.] But nobody uses such things, because with no feedback from keys or strings or some physical something, you have no hope of correctly moving your fingers to three to seven precise positions per second.

Do read *The Fable of the Keys*¹, a paper tracing the history of the Dvorak keyboard versus the QWERTY. The gist: the evidence that the Dvorak is really faster is kinda

¹http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1069950

spurious. The standard story of the prevalence of QWERTY is in terms of a quirky history, that the key layout was designed to minimize jams on an old-fashioned type of typewriter, by putting keys often used together on opposite sides of the keyboard—;deliberately slowing down the typists!—and then here we are in 2010—the future!—still using that same layout, still slowed down to solve a mechanical problem that doesn't exist anymore. But if sequential letters are on opposite sides of the keyboard, then that means you're alternating hands as you type, which is actually ideal for speedy typing. Thus the intent may have been to space apart those metal rods that strike the page on no-longer-extant typewriters, but the result was exactly what we need in the present day. From there we're left to bicker about little design decisions, like whether E should be on the home row, where to put all our new kinds of parentheses (`{<[]>}`), or whether the right pinky is doing work that maybe the thumbs could do.

Also, smart designers of modern computing systems write for QWERTY, and so put oft-used commands in convenient places. I actually ran a keylogger for a day, and by far, my most-used keys were j, k, and a, which various pieces of software chose as important because they are on the home row. So QWERTY isn't evolving as our work does, but our work can evolve to optimize QWERTY.

And that concludes my paean: keyboards are a weird thing that developed via an odd history, and in a different reality we're using something entirely different. But that doesn't detract from how they allow us to do wonderful things with our hands.