

## Word jumble hoax debunked

I've previously talked about the [Aoccdrnig to rscheearch at Cmabrigde uinervtisy](#) hoax. The study described in that hoax has recently been carried out by a team at the University of Massachusetts at Amherst and the University of Durham. The data conclusively demonstrates that the hoax is incorrect.

The hoax claimed that transposing letters within a word did not slow reading performance because we recognize words as whole shapes. The team led by Keith Rayner found that all kinds of letter transpositions slow reading speed. Transposing internal letters as shown in the original hoax resulted in a reading speed decline from 255 words per minute (wpm) to 227 words per minute. Performance was worse if the transposition included the beginning or final letters of a word.

	Example Sentence
Normal	The boy could not solve the problem so he asked for help.
Internal letters	The boy cuold not slove the probelm so he aksed for help.
Final letters	The boy coudl not solev the problme so he askde for help.
Beginning letters	The boy oucld not oslve the rproblem so he saked for help.

Additionally this study examined readers' eye movements while reading these different conditions. They found that readers needed to spend more time fixating on words in the transposition conditions and made more regressive saccades.

This study only looked at letter transpositions of a single position, like the kinds used in the original hoax. I can only speculate how dramatically reading speed would be hurt with more dramatic transpositions like:

*The boy cluod not svloee the pelborm so he aeksd for help.*

Hopefully this study puts the hoax to rest. This and many other studies have made it clear that we don't recognize words by whole shapes, but use letter information to recognize words.

Cheers, Kevin Larson

Rayner, K., White, S., Johnson, R., Liversedge, S. (2006). Raeding Wrods With Jubmled Lettres; There Is a Cost. *Psychological Science* 17(3), 192-193.

Published Tuesday, May 09, 2006 3:39 PM by [fbcontrb](#)

## Comments

### # re: Word jumble hoax debunked

I think it's quite interesting that, although reading speed is diminished with internal rearrangement, it's possibly not diminished by as much as you might expect.

Wednesday, May 10, 2006 3:38 AM by [Duncan Lock](#)

**# re: Word jumble hoax debunked**

This reminds me of my first car, an old Volkswagen Beetle. Its top speed on open road was 72 miles per hour (116 kilometers per hour). When its top speed suddenly decreased to 65 mph (105 kph), I knew that it was time to get a tune up.

255 wpm is analogous to my car's top speed, and a ten percent reduction in speed to 227 wpm is a strong indication that something has seriously gone wrong with the text.

Cheers, Kevin

Wednesday, May 10, 2006 7:57 PM by [fbcontrb](#)

**# re: Word jumble hoax debunked**

Well, I would still think that we recognize word shapes and not letters when reading.

But if you jumble letters within a word you also change the word shape, hence the (slight) decrease in reading speed...

Friday, June 09, 2006 8:47 AM by Jacob

**# re: Word jumble hoax debunked**

Jakob, why do you think we recognize word shapes?

In this longer paper I cover the evidence in favor of parallel letter recognition over the word shape hypothesis.

<http://www.microsoft.com/typography/ctfonts/WordRecognition.aspx>

Cheers, Kevin

Friday, June 16, 2006 10:23 PM by Kevin Larson

**# re: Word jumble hoax debunked**

Our brain probably looks at both word shapes and letters and is also primed by context. When you mix up the letters, it does some damage, and the brain has to work harder, but it can still figure it out. It's still possible to read a jumbled sentence fluently.

Did the "hoax" really assert that reading speed did not decrease at all? It was my understanding that the conclusion was simply that we *can* read jumbled words, and pretty easily at that. And that alone is pretty interesting!

Thursday, February 22, 2007 1:00 PM by Anna

**# re: Word jumble hoax debunked**

I don't necessarily have an informed opinion on word shape vs. parallel letter recognition. But I think I read once — in a typography book — that one reason to use all-caps sparingly is that word shapes become less distinctive and thus harder to read. To some approximation, any all-caps word just looks

like a RECTANGLE of some length. Whereas in 'rectangle' the ascenders and descenders add distinction to the shape and make it faster to recognize.

Thursday, March 29, 2007 8:20 AM by [Chris](#)

**# re: Word jumble hoax debunked**

the "hoaxer" is you matey and the only thing to be "debunked" should be this blog.

of course its fascinating that we can read "jumbled up" words - its TURLY AZAMNIG in fact. What a dour individual with no life you must be.

Wednesday, August 08, 2007 1:30 AM by [justin burke](#)

**# re: Word jumble hoax debunked**

wow justin. how ill informed you must be. yes it is amazing that we can read jumbled words. but i also point you to this site. maybe you will be greater informed next time you choose to post.

<http://www.mrc-cbu.cam.ac.uk/~matt/Cmabrigde/>

Monday, October 08, 2007 5:21 AM by pete