

Kindle2: Crack for readers... until you start reading

How text formatting can ruin (or enhance) the readability and persuasiveness of text

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May you live in interesting times

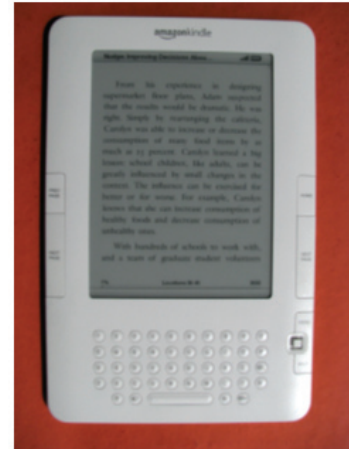
Maybe it was the early adopter thing. Curiosity about new gadgets. Wanting to touch. To play. To decide if that new little thing will be the next big thing.

Maybe it was the road-warrior reader thing: I travel a lot. And I read a lot. Which book should I take?

Maybe it was the attention deficit thing. Reading one book at a time gets... boring. And all those books get heavy.

However you explain it, I own a Kindle2.

It's been an interesting ride. I'm ready to get off the bike.



You say red herring, I say red herrings

To be sure, part of the fun of Kindle is that Amazon had to balance a lot of design options. For instance, they tried to create an *unpacking-the-product-should-be-emotional* experience. For an Apple native, that was a bit weird. Somehow, the pull-off paper zipper (think FedEx envelopes) sets the wrong tone. But, they tried.

Out of the box, my first impression was positive. It's smaller than I thought. The text resolution is better than I had hoped.

But then, there is no backlight. That means the battery lasts a really long time. But it also means that the screen is surprisingly grey and the text contrast is low. And you still need a night light to read.

The keyboard lets you annotate while you read. But it's awkward. Big. That choice seemed odd since the bigger keyboard meant a smaller reading screen. We are all trained to type on phone-sized keyboards by now, aren't we?

Navigating isn't bad. The fact that the Menu button takes you to *Shop At the Kindle Store* is irritating. Even if I understand why it's so. The joystick offers a few surprises, like you can't turn pages with it.

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But these problems are red herring(s). Kindle isn't really about unpacking and navigating. It's about reading. Unfortunately, the reading part is where Amazon goes wrong.

Step away from the edge

It was a small detail in the Kindle ad that tipped my decision to try it. Unless you've spent years thinking about the psychology of reading, you probably won't notice it.



The text on the right side of the “page” is not right-justified. It has a ragged-right edge. And that, for me, was tantalizing.

In justified text, the size of spaces between words is varied to make the lines come out even (like in this paragraph). The size of the spaces is irregular but not meaningful. The goal is just to make the lines come out even. But your brain registers that the spaces are different sizes. And it tries to sort out what that information conveys. Trying to interpret signals that are just noise slows you down and makes reading feel more effortful.

Just because you can, doesn't mean you should

It may seem counter-intuitive that a small detail like where lines end would make text easier to read. If it's true, why do publishers of books, journals, magazines and newspapers right-justify everything? It's a question that a lot of us who think about reading think about, a lot.

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Our most charitable guess is that publishers think that justified text looks better. It does. If you like rectangles. But the research shows that people read ragged-right copy faster than right-justified copy (Hartley & Burnhill, 1971; Jandreau & Bever, 1992). So, to justify or not to justify depends on whether the goal is a prettier page or an easier read.

I vote for easier to read. And that is why I was enticed by the raggedy edged Kindle ad.

And the first publication I opened (the New Yorker) lived up to the promise: Hertzberg, in ragged right. With the cartoons thoughtfully aggregated into one section. Joy.

But the second one I opened (Nudge; Improving Decisions about Health, Wealth and Happiness), and the third, fourth, fifth, and sixth (*White Tiger*, a novel; *I was told there'd be cake*, essays; *Technology Review*; and the *Wall Street Journal*, respectively) all have right-justified text. Gain the buyer's trust. Violate the buyer's trust.

To be fair, it may not be Amazon that is making the choice. But they could. And if any single group can make reading better, it is Amazon. Well, maybe Amazon and ReadSmart.

One stop past the end of the line...

Actually, there's more to enhancing readability than where lines end. Remember how the random size of spaces between words in right-justified text undermines reading? The reverse is also true. Bever and colleagues, linguists and psychologists at the University of Arizona, have shown that when line endings and space sizes offer clues to how words should be grouped, reading is faster and feels easier (Bever, Jandreau, Burwell, Kaplan & Zaenan, 1990; Jandreau & Bever, 1992; among many others.)

To show this, Bever and team engineered (and patented) a text processing / formatting algorithm (which they call ReadSmart) that "reads" text input and adjusts inter- and intra-word spacing based on psychologically tested, linguistic rules. The new, meaningful spaces guide readers' eyes and help them to group the words correctly even as they read. "ReadSmarted" text is easier to read

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because part of work of reading is already done for you. But unlike other text formatting algorithms, ReadSmart improves readability without changing the length of the text or the way that it looks on the surface.

Bever's early studies of linguistic formatting (including more than 500 students in the U.S. and abroad) showed that when the spaces between / within words predict the structure, comprehension and reading speed increase up to 20%. Similar comprehension improvements have been documented for readers under duress and second- language readers.

It's much more persuasive if I read it

More recent industry studies suggest that improving readability and comprehension may also increase persuasiveness. The scenario supposedly goes something like this:

1. A potential donor receives solicitation letters. If they like the cause, they may open the letter.
2. If they open them, they tend to skim, for about as long as it takes to get from the front door / mail box to the kitchen / trash can.
3. Since Readsmarted text reads faster and more easily, potential donors get further into the message to the emotional hook that removes the block or amplifies their drive toward commitment.
4. Along the way, since the cognitive burden of "reading" is reduced by ReadSmartering text, readers can commit more mental energy to processing and remembering the message. Remembered messages are more persuasive.

Even if the scenario is not exactly right, the effect of formatting text to improve readability is profound. Direct mail donor acquisition letters that are formatted by ReadSmart work better. In a meta-analysis of 5 direct marketing campaigns reaching 393,000 households (over multiple charities), the formatted letters triggered 22% more responses than donor letters with standard text. And, people who responded to a formatted solicitation ultimately donated more (48% more on average)¹.

¹ To be sure, the scale of the behavior change resulting from ReadSmartering text makes it feel a bit like a *but-wait!-there's more!* paid-for-TV commercial. I'd be far more skeptical, if I didn't have direct knowledge of the psycholinguistic research behind text-formatting generally and ReadSmart specifically. (Fair balance: Bever was my thesis advisor.)

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More than meets the eye

Ultimately, linguistically-informed text formatting algorithms like ReadSmart make text more persuasive by reducing the mental burden of reading. Readers understand better with less effort. By extension, organizations and agencies that apply these algorithms can benefit as well. And that promise makes ReadSmart tantalizing.

Sort of like the Kindle2 was. And could be again. If Amazon made “ReadSmart my book” the default menu item. Until then, I’m going back to paperbacks.

[The ReadSmart text formatting algorithm improves readability on paper, in fixed-width websites, and on mobile phones. To learn more go to www.readsmart.com.]

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The iPod shuffle drawing will be held on Friday, April 3, 2009.

The Pragmatic Ergonomist, Dr. Eric Schaffer

We know that if users can’t find it, they can’t be persuaded by it. But this goes a bit beyond. It shows that if the user must work hard to get to content (even in a small detail like text quality) it can make a material impact on persuasion. Usability is no longer enough, but it is absolutely needed.

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About the author



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Kath Straub guides organizations and agencies to design communication and interactions systems that inform, educate, and shape key behaviors. To that end, she integrates multi-disciplinary research methods to uncover the psychological and emotional drives and barriers that inform human attitudes, decisions, and behaviors. Most recently, Kath's interests have shifted to understanding how emerging communication methods (e.g., microblogging) and technologies (e.g., mobile) augment the existing information ecosystem and evolve consumer/citizen expectations and behavior. She applies this knowledge to help organizations develop outreach strategies, and to proactively assimilate and draw upon the new channels and changing behaviors. Electronic channels are replacing the "picket fences" we used to gossip over. Is your organization ready?

Kath Straub is the Chief Scientist and Executive Director of Human Factors International. She holds a Ph.D. in Brain and Cognitive Science from the University of Rochester (NY). She has been recognized by Federal Computer Week Magazine as a Rising Star in Government.



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