
Stand-Up Ergonomics

Communicating to Designers & the Public

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Rob Tannen, PhD CPE

- Director of Research & Interaction Design @Bresslergroup
- Expert in handheld devices, instruments, and interfaces
- Designed consumer, industrial and medical products
- Worked with New York Stock Exchange, Siemens, US Air Force



“Stand-Up”

- (of a comedian) delivering a comic monologue while alone on the stage.
- A good solid man business man, can be trusted.



Communicating Ergonomics



Communicating Ergonomics



Case Studies for Communicating Ergonomics

- ① Ergonomics for Marketing Products
- ② Ergonomics for Interaction Designers
- ③ Ergonomics for the Design Public

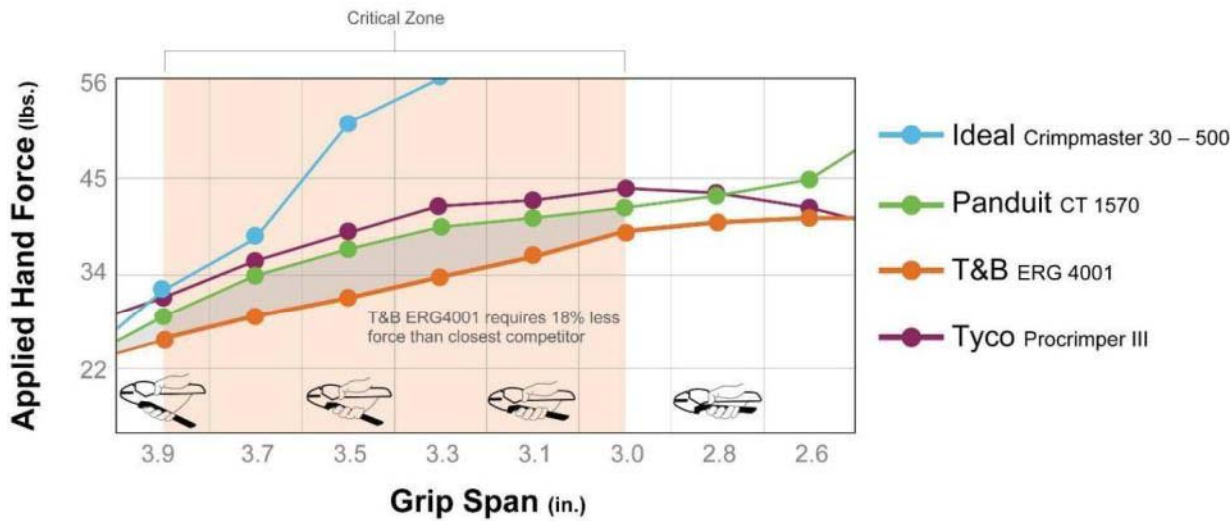
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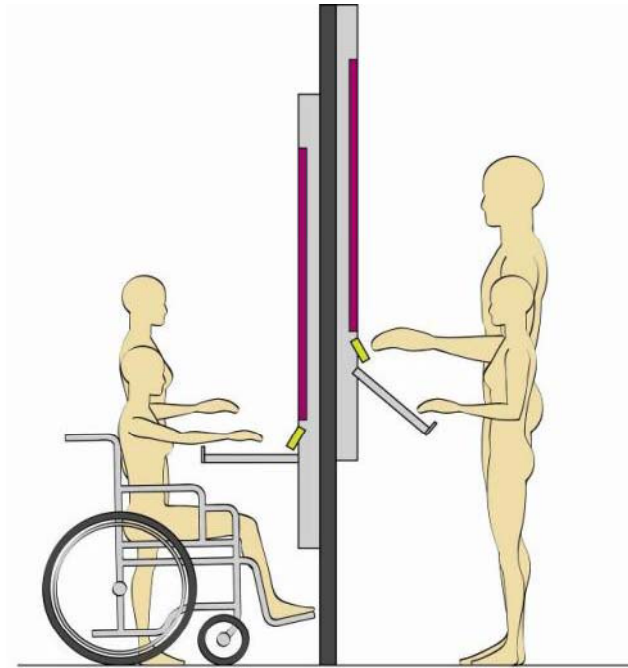
Ergonomics for Marketing Products

- Digestible
- Quantitative
- Differentiated



Ergonomics for Interaction Designers

- Relatable
- Appropriately Technical
- Actionable



Ergonomics for the Design Public

- Relevant
- Brief
- Humorous

EXPERT ADVICE: Q&A

BUREAU OF ERGONOMICS

Dr. Rob Tannen, a Certified Professional Ergonomist, explains some of design's biggest puzzlers

Q What really makes a product "ergonomic"?

"Ergonomic" is a term that gets thrown around a lot these days. Like the old pornography adage, most people don't have a clear definition of what makes a product "ergonomic" but they know it when they see it...or rather, feel it.

The actual definition of ergonomic means something that is designed to maximize fit and comfort for more effective use. Often the strongest associations we have with a brand, whether it's a car or a toothbrush, stem from our physical interactions with the design. Ironically, products that market themselves as ergonomic are often not ergonomic at all, and frequently substitute physical fit with more visible features (such as grips or ribbing) that provide little value.

There are measurable scientific parameters that can be used to evaluate how well a product fits, with a slight variance from person to person. Next time you're purchasing a product, think about these fundamental characteristics.

- **Strength** This is what ergonomically separates a laptop from a desktop computer. For a portable product, ask yourself: Will this be too heavy to carry around all day? Does this require more force to set up or operate than I am comfortable with?
- **Reach** Think of trying to get that mustard at the back of the fridge. How much do I need to extend or stretch my limbs to access or use a product?
- **Clearance** Airline seats are the biggest offender in this category for their notoriously poor clearance. Is there enough room in my environment for both the product to work and myself to work effectively?
- **Posture** This could be a concern, even if it's just your hand or fingers that are contorting and not your whole body. Like trying to remove batteries from a toy. Consider: Will using this product require me to bend excessively?

Keep in mind that several of these factors will usually occur simultaneously when a product is truly "ergonomic."

Illustration by Luke Williams



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I've heard that with today's texting generation, we're all going to need finger and thumb joint replacements by the time we're 60. Is this true?

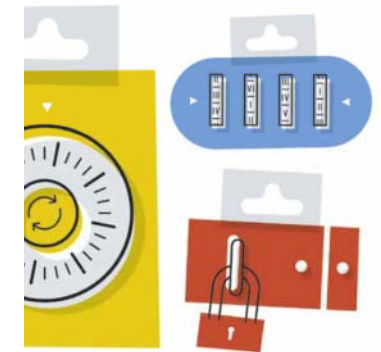
Texting is just the latest in the recent history of demonized repetitive motion activities that were supposed to damage our bodies (for other examples, see the hula hoops, video games, and masturbation). Yes, texting too much can lead to muscle fatigue and possibly injury, but so can practicing the violin. The human body is highly

adaptable and recovers quickly with moderation and rest. Good advice is to limit texting by taking breaks, vary which fingers you use, and stopping for a while if it hurts. Besides, if you really text that much, it's more likely that you'll walk into an open manhole before your joints wear out. ■

Rob Tannen is an expert in designing products and interfaces that ease the cognitive and physical experience. He is the director of research and innovation design at Design Bureau, a product development firm in Philadelphia. He holds a PhD in human factors and is a Certified Professional Ergonomist. design@rob-tannen.com

ELASTIC PACKAGING OF SIRI

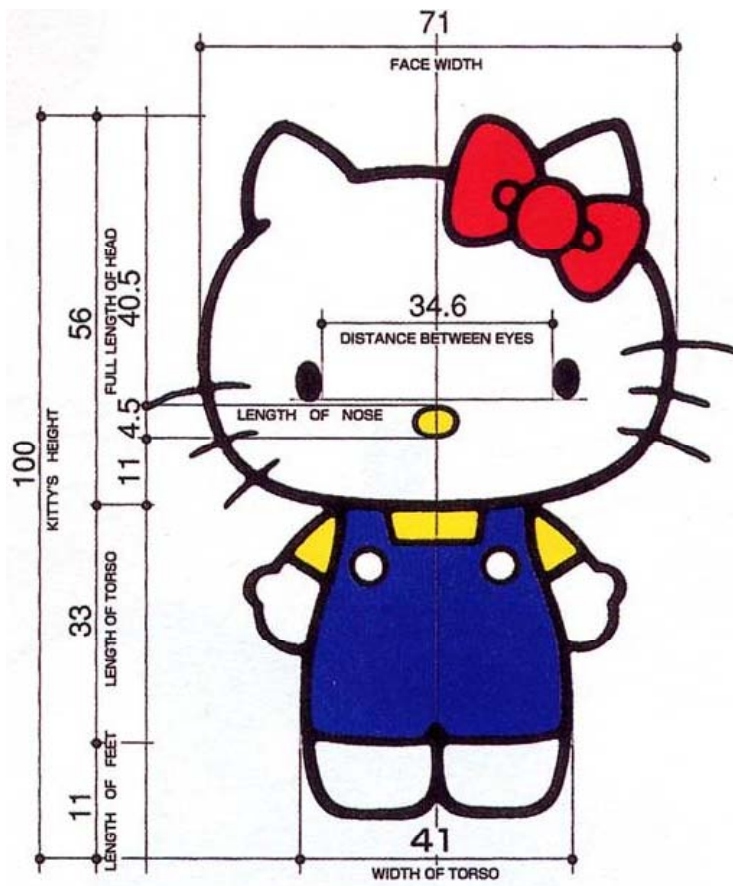
the latest in tactile design quandaries



designing voice interface design? packaging accessibility, as is the eco-trend to go from plastic to cardboard and other greener materials, but don't expect change to come quick enough.

Q: Is voice recognition, like Siri, the future of interface design?

A: Voice recognition is one of those trends that seems to come around every few years, but never lasts—kind of like electric cars or professional baseball in Washington, DC. Although voice interaction provides great usability advantages over all other types of interfaces, it seems to suffer from the social stigmas of talking to an inanimate object, as well as a lack of privacy. I expect that voice interfaces will continue to be offered as an alternative option, but it will always be paired with manual controls. In the long term, I'm anxious to see further development of subvocalization interfaces that can potentially detect commands from silent speech patterns like when you read to yourself. ■



Questions?