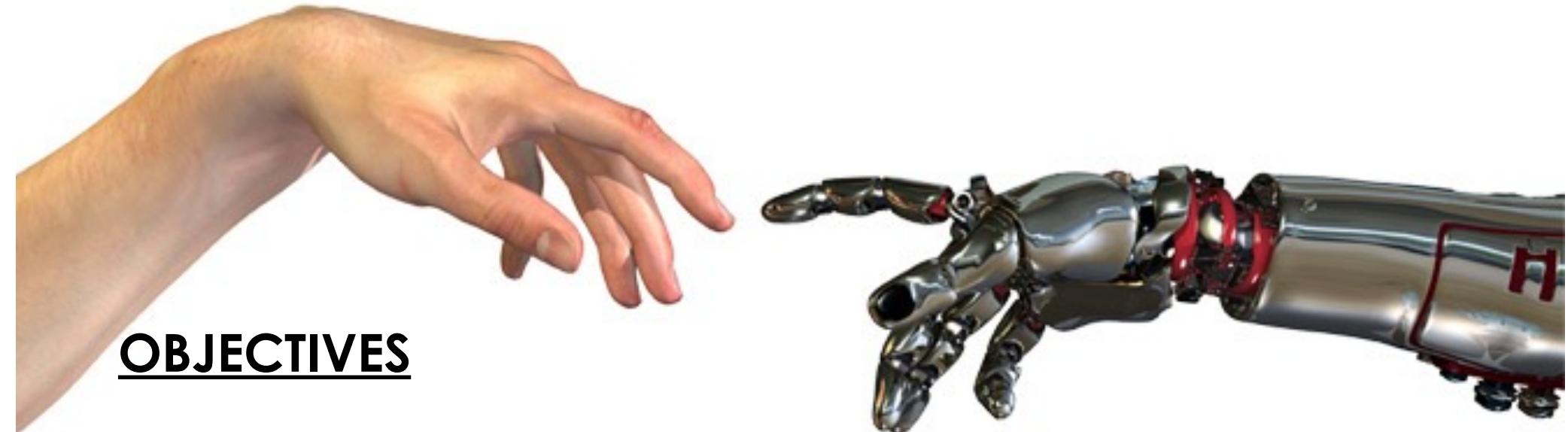


Human-Computer Interaction

Intro to Human Factors (HF) - Part III



OBJECTIVES

- 1.) More Examples of Human Factors
- 2.) HCI Design Requirements



How do we operate this BMW iDrive thing?



How do we know it's designed properly?

User testing, but who do we use and how do we test?

How = **Observe** & Ask - DON'T
MAKE THEM THINK!

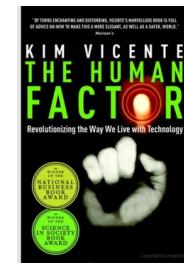
Who =

Age

Gender

Previous experience with
technology

Education



Unfortunately, this Cyclopean Mechanistic trend toward bewildering complexity is intensifying. Take the lunatic example of the 2003 BMW 7 series, which has an electronic dashboard system called iDrive, that offers something like seven or eight hundred features. Even the company executives don't know the exact number, according to a report in *USA Today*.⁶ Granted, a great deal of scientific and engineering knowledge was required to pull it off. But the BMW 7 Series is a car, not a spaceship. Is the end result something that most people can easily use? *Car and Driver* magazine called it "a lunatic attempt to replace intuitive controls with overwrought silicon, an electronic paper clip on a lease plan. One of our senior editors needed 10 minutes just to figure out how to start it."⁷ An editor at *Road & Track* agreed: "It reminds me of software designers who become so familiar with the workings of their products that they forget actual customers at some point will have to learn how to use them. . . . Bottom line, this system forces the user to think way too much. A good system should do just the opposite."⁸ As a result, *Road & Track* wound up entitling their review article: "iDrive? No, you drive, while I fiddle with the controller."

iDrive allows the driver to control climate, the audio system (radio and CD player), the navigation system and communication system.

My BMW X5



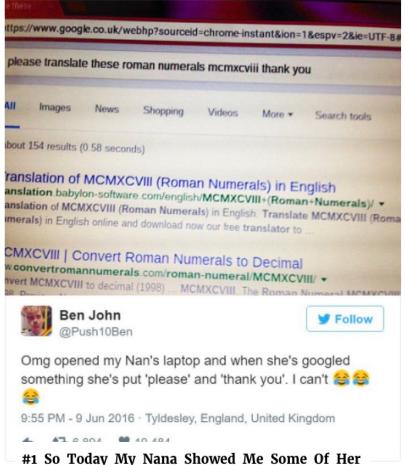
Fundamental HCI Design Requirements

1. Consider **every** potential user.
 - Look beyond young, technologically advantaged
 - Consider color blind, disabled, visually impaired etc.
2. As a computer scientist/engineer/designer you must **anticipate** common mistakes the user may make!
 - To do this, your users must be involved in the development and testing of your hardware/software.
3. **AND –** If the user makes an error **it** should not result in a catastrophic error!

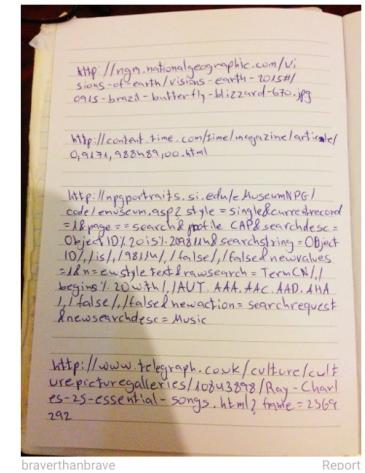


Consider your users ...

#2 When My Grandma Googles Something She Puts "Please" And "Thank You"



#1 So Today My Nana Showed Me Some Of Her Favorite Websites



#12. My Grandma Took Her First Selfie Today. She's Using The Front Camera To Take A Mirror Selfie



#6 My 90 Year Old Grandma From Japan, Showing Us How She Zooms In With An Iphone



#4 My Grandmother Complained Her Remote Was Confusing, So I Grandma-Ified It For Her

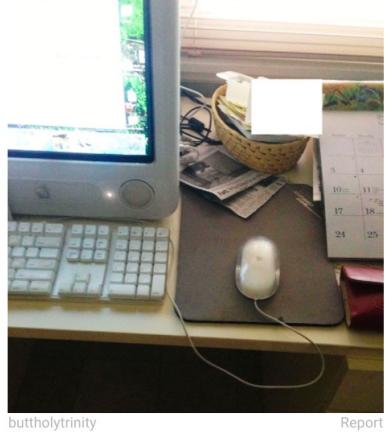


#3 My Nana Asked Me To Fix Her Phone Because "The Outside Clock Is Always Showing The Wrong Time"



http://www.boredpanda.com/older-people-versus-technology-fails/?page_num=5&utm_content=inf_55_2558_2&utm_source=facebook&utm_medium=link&utm_campaign=boredpanda_pinterest

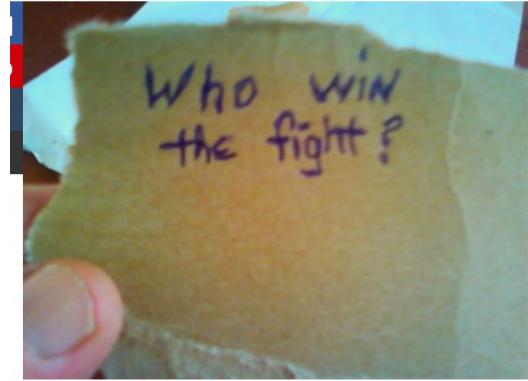
#16 My Grandma Called Me Over To Fix Her Computer Because "Everything Moves Backwards"



buttholytrinity

Report

#14 My Dad Doesn't Know How To Text On His Flip Phone, So He Always Sends Me Multimedia Messages



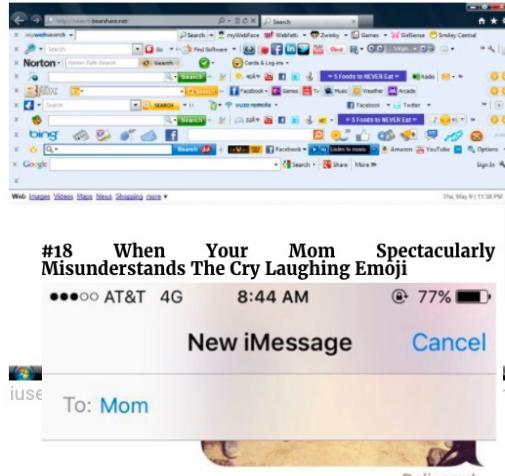
Mrboutte

Report

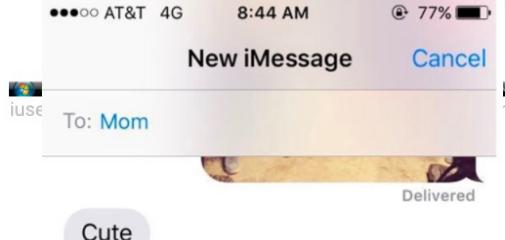
#17 Mom Tries To Send Me A Pic Of Grandma's Diapers So I Can Get Some At The Store. Somehow "The Phone Doesn't Let Me Send Pictures!" Two Hours Later I Realize She Made It Her Profile Picture. Still Hasn't Noticed It



#15 Mom Asked Why The Computer Was So Slow. She Has Eleven Toolbars



#18 When Your Mom Spectacularly Misunderstands The Cry Laughing Emoji



Cute

This is a laughing face
😂 you have to stop
using it on Facebook
when someone's animal
dies

Send

●●●● AT&T 4G 8:45 AM 77% ↗
tagged in a post.

#13 My Dad Said "Look, Those TV Models Are Pirates"



sliderxs

Report

#19 Good Job, Grandma (She's 82)



Report

Who's to Blame?

1. If the user makes a mistake it's not the user's fault, it's a design flaw, not a human flaw.
2. Step back and think like a novice user, not a developer/designer. Of course, **you** know how it works!
3. Must meet with your users before, during, and after your design/development. Iterative Design!

