

# The Golden Rules of Web Design



## Keynote Presentation

Theo Mandel, Ph.D.  
User eXperience Russia  
26 October, 2009

# The (New) Golden Rules of Web Design



Or, why we should **still** follow the (Old)  
Golden Rules of Interface Design

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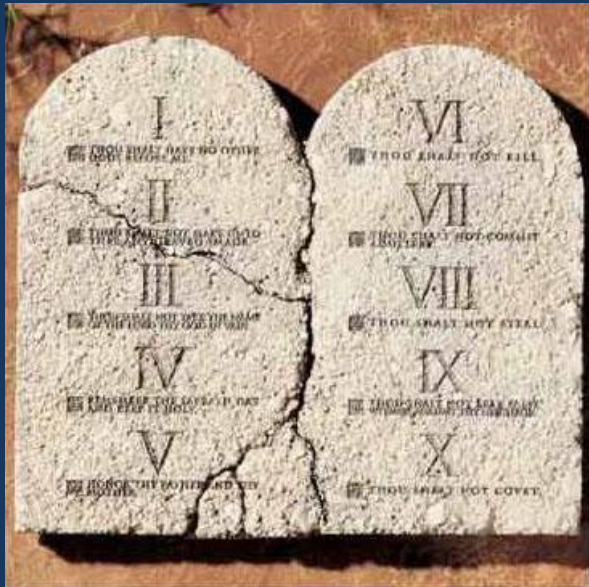
Platinum sponsor

# Theo Mandel, Ph.D.

- Education: M.A. & Ph.D. in Cognitive Psychology
- Employment:
  - 11 years at IBM in user interface architecture, SW OS/application design guidelines and usability
  - Independent UI & usability consultant (17 years)
  - Co-founder of software & Web startup companies
- Healthcare Chairman, World Usability Day 2007
- Author of two industry books, numerous articles and other publications and case studies
- Website: [www.theomandel.com](http://www.theomandel.com)
- E-mail: [theo@theomandel.com](mailto:theo@theomandel.com)

# Golden Rules – Why Today? Why Here?

## User Experience Design: The Journey from Discovery to Advocacy



- “Who knows only his own generation remains always a child.” – Cicero, 50 BC
- “Those who cannot remember the past are condemned to repeat it.” – Santayana, 1905
- “Universal“ design principles that apply to all software/web design, regardless of operating system, browser, device, media, industry, users, tasks, etc.

# Golden Rules – Why Today? Why Here?



Who is this man?

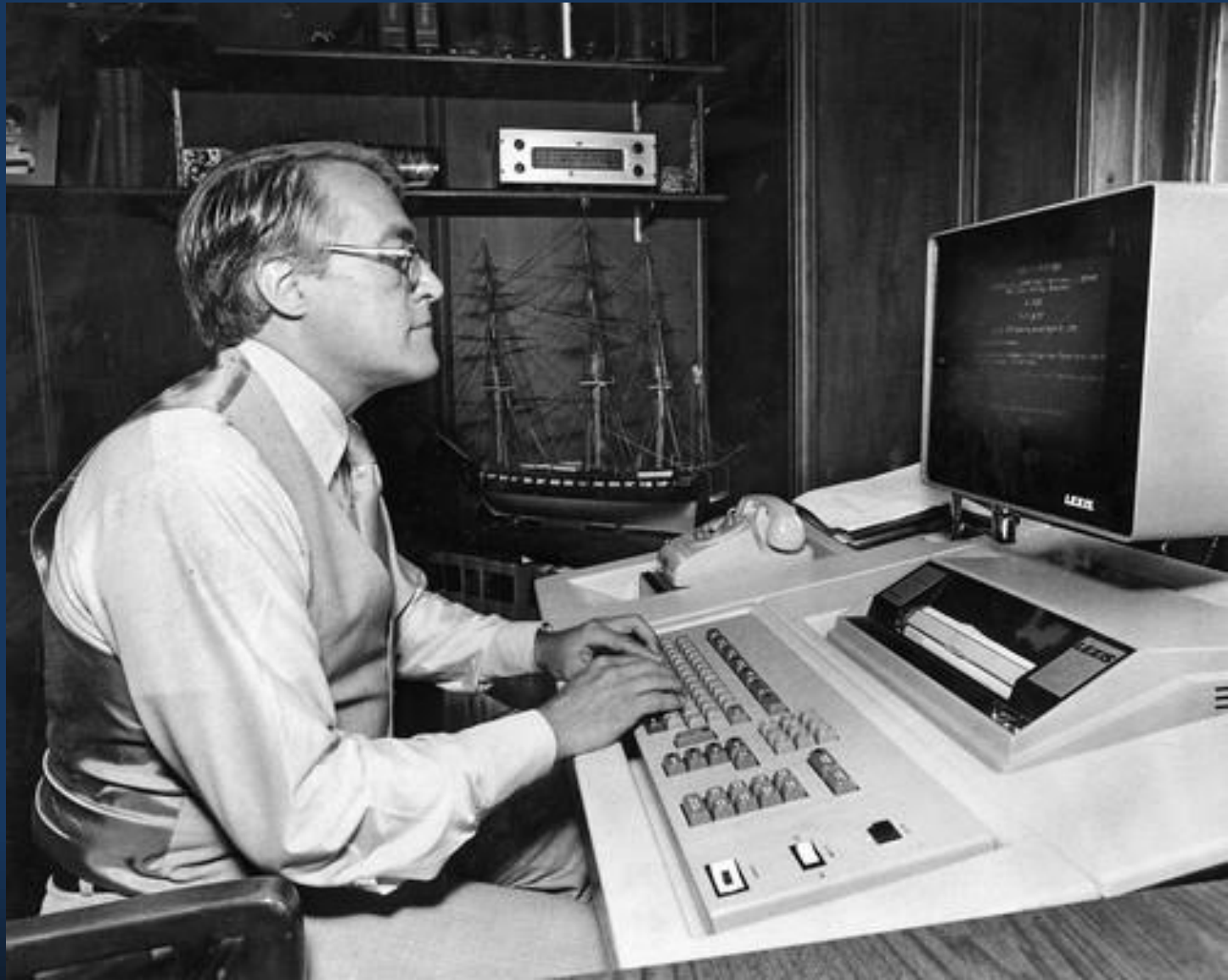
# Golden Rules – Why Today? Why Here?



## Jakob Nielsen (1990)

“The principles are so basic that even futuristic dialogue designs such as three-dimensional interfaces with DataGlove input devices, gesture recognition, and live video images will always have to take them into account as long as they are based on the basic paradigm of dialogues and user commands.”

# History of Interface Golden Rules



# History of Interface Golden Rules – 1970's

- W. J. Hansen (1971) proposed the first (and perhaps the shortest) list of design principles
- **“User Engineering Principles for Interactive Systems”** AFIPS FJCC, Vol. 39, 1971
- Hansen's principles:
  1. Know the user
  2. Minimize memorization
  3. Optimize operations
  4. Engineer for errors

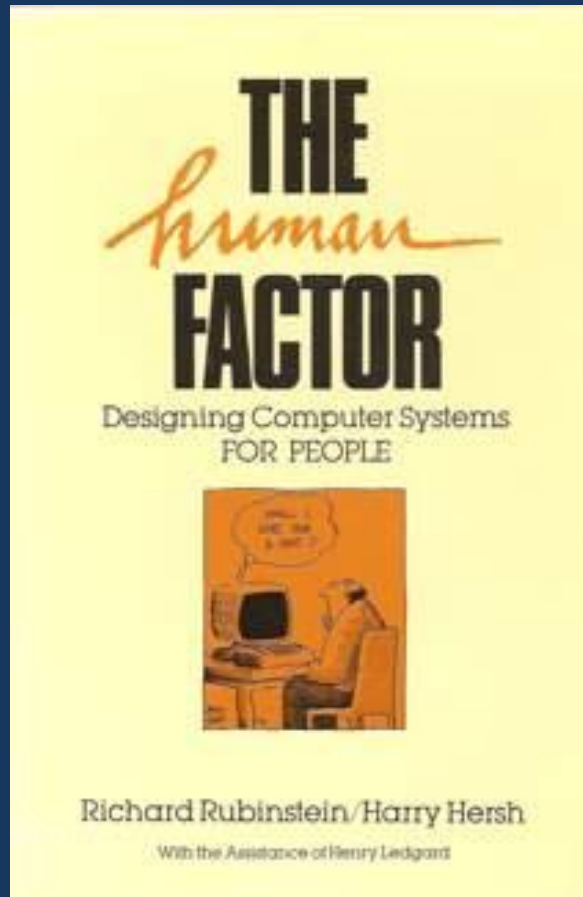
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**AFIPS = American Federation of  
Information Processing Societies**

**FJCC = Fall Joint Computer Conferences**

# History of Interface Golden Rules – 1980's



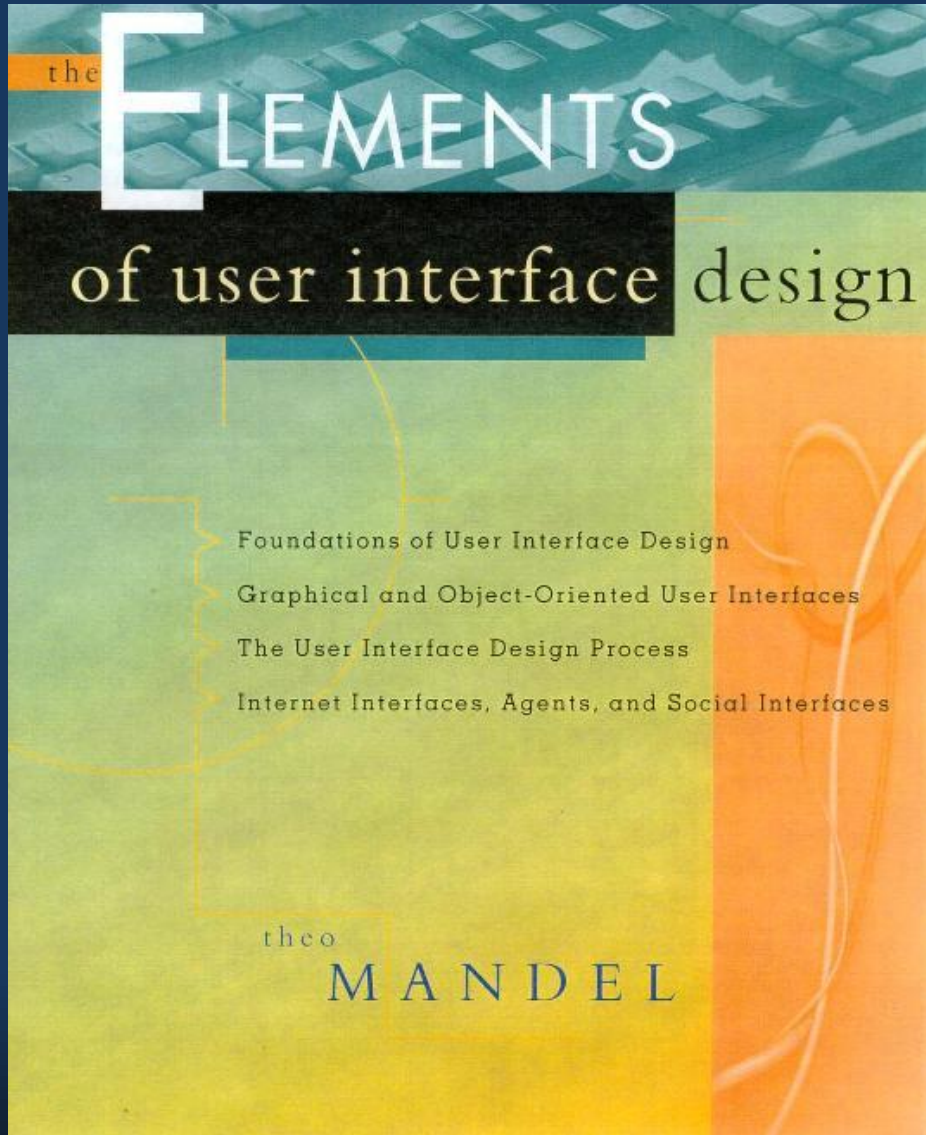
- Richard Rubinstein & Harry Hersh  
**The Human Factor** (1984)
- Classic book on Human-Computer Interaction (HCI)
- The longest list, with 93 design principles, ranging from:
  1. Designers make myths – users make conceptual models to
  93. Videotape real users

# History of Interface Golden Rules – 1990's

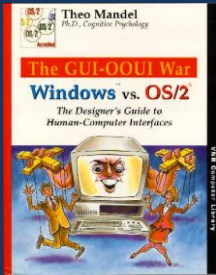
## Golden Era of PC and Mac Software Design

- **Designing the User Interface: Strategies for Effective Human-Computer Interaction**  
Ben Shneiderman (1992)
- **Apple Human Interface Guidelines** (Apple, 1992)
- **Object-Oriented Interface Design: IBM Common User Access Guidelines** (IBM, 1992)
- **OSF/Motif Style Guide**  
(Open Software Foundation, 1992)
- **Windows Interface Guidelines for Software Design** (Microsoft, 1995)

# History of Interface Golden Rules – 1990's

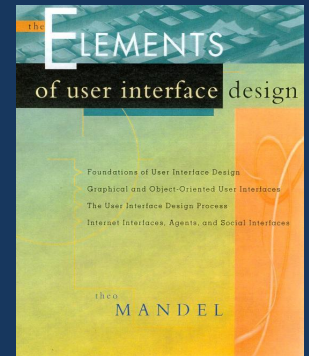


# History of Interface Golden Rules – 1990's



- **Windows Vs. OS 2: The GUI-OOUI War**  
Mandel (Van Nostrand Reinhold, 1994)

- **The Elements of User Interface Design**  
Mandel (John Wiley & Sons, 1997)

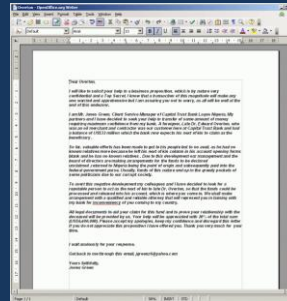
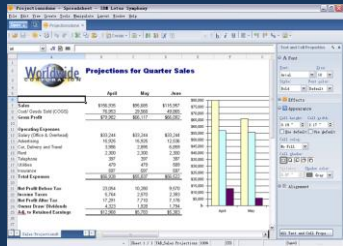


- Chapter on **Golden Rules**, which is the basis for this presentation
- View/download the **Golden Rules** chapter (English and Russian version)



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# Software/Web Usability – Ten Years Ago

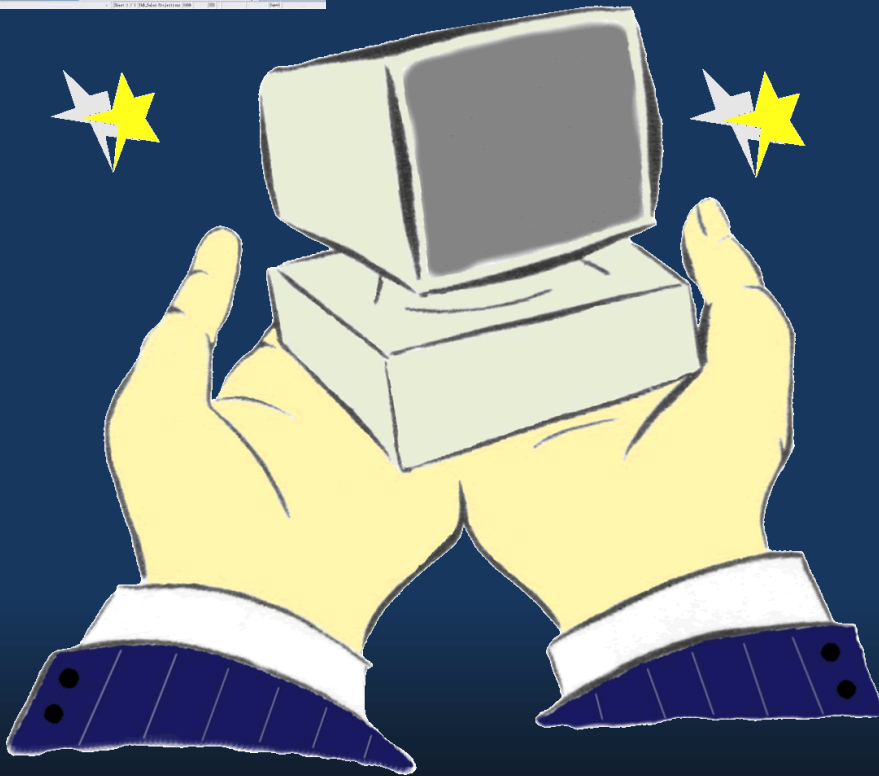


## User and Computer

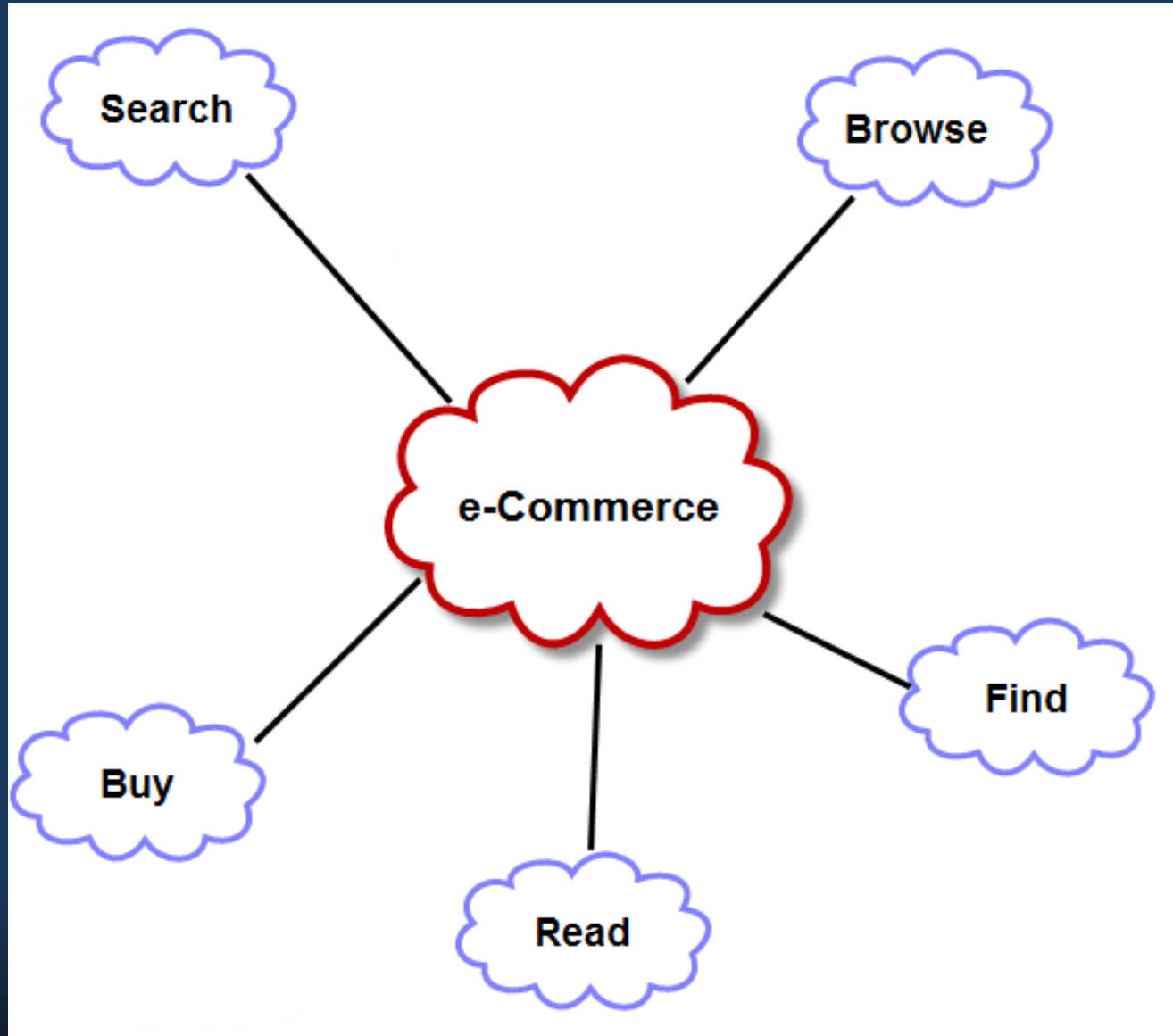
- Word processing
- Spreadsheets
- Focus on programs

## Websites

- eCommerce
- Corporate sites:
  - Amazon.com (1994)
  - eBay (1995)
- Abandoned Shopping Carts



# Software/Web Usability – Ten Years Ago



# Software/Web Usability – Today

## User reaching out to Others and Community



- Social networking
- Community (Blogs, Wikis)
- Sharing Content/Media (YouTube)
- Immediate Status/Info (IM, Twitter - What are you doing now?)
- Environment and Global Issues
- Mobile devices

# SW & Web Today



# User Experience & Usability Today

## Today's Usability Challenges

- New issues for usability professionals



- Jakob Nielsen: “We made a Twitter message more **punchy**, **credible**, and **viral** through 5 rounds of redesign”  
(useit.com Alertbox, 24 August, 2009)

# User Experience & Usability Today

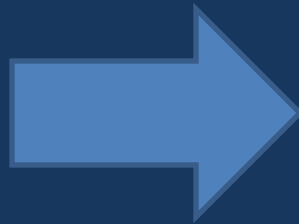
## New Cultural Experiences and Anecdotes

- New Zealand Police made first “**Facebook arrest**” after placing footage of burglar during a burglary on Facebook. (January 2009)
- Burglar Arrested After Checking Facebook During Robbery arrested (**The Journal**, 17 September, 2009)
  - 19-year-old Pennsylvania man charged with felony robbery. Burglar checked his Facebook account before leaving with two diamond rings, forgetting to log out.
  - Burglar remains in custody on \$10,000 bail, facing a maximum 10 year prison sentence if convicted.

# New Industry Term & Acronym

## Human-Computer Interaction (HCI)

- User Interface Design
- Typical tasks:
  - Search
  - Browse
  - Read
  - Find
  - Purchase
- Typical measures:
  - Task completion
  - Task time
  - User satisfaction



## Human-Computer-Community Interaction (HCCI)

- User Experience Design
- Typical tasks:
  - Search, Browse, Read, Find, Purchase
  - Share, Tweet, Comment, Refer, Recommend, Invite, Link, Follow, Personalize, Watch Media, Connect
- New measures:
  - Traditional measures, **plus**
  - Fun/enjoyment
  - Social satisfaction/benefits

# Golden Rules of Web Design – Major Areas

**Place Users in Control of the Interface (10)**

**Reduce Users' Memory Load (9)**

**Make the User Interface Consistent (5)**

# Golden Rules – Details/Format

- Format: Golden Rule (Keyword)  
**Provide meaningful paths and exits (Navigable)**
- Keyword – one-word reminder (supports **Reduce User's Memory Load** golden rules)
- Keynote Presentation – only time to address a few points and concepts per area
- **Join my workshop on Wednesday morning if you are interested in going into MUCH more detail on this topic**

# Golden Rules of Web Design

## Place Users in Control of the Interface



# Place Users in Control

Do users want to take a plane or drive a car?



- Users want to be **drivers (Car)** rather than **passengers (Airplane)**
- Users want to control direction, navigation, and final destination
- However, drivers may need specific knowledge before they are able to successfully drive a car
- Sometimes better to be a passenger (novice user, demo)

# Place Users in Control (Part 1)

Use modes judiciously  
**(Modeless)**

Allow users to use either the keyboard or mouse  
**(Flexible)**

Allow users to change focus  
**(Interruptible)**

Display descriptive messages and text  
**(Helpful)**

Provide immediate and reversible actions & feedback  
**(Forgiving)**

# Place Users in Control (Part 2)

Provide meaningful paths and exits  
**(Navigable)**

Accommodate users with different skill levels  
**(Accessible)**

Make the user interface transparent  
**(Facilitative)**

Allow users to customize the interface  
**(Preferences)**

Allow users to directly manipulate interface objects  
**(Interactive)**

# Place Users in Control

## Provide meaningful paths and exits (**Navigable**)

- **Christopher Alexander**, famous architect
- Noted for theories about design and for more than 200 building projects around the world.
- Reasoning – **Users** know more about buildings they need than any architect.
- Alexander produced and validated a "pattern language" designed to empower any human being to design and build at any scale.

# Place Users in Control

## Provide meaningful paths and exits (**Navigable**)

- Contractors wanted to know where to install walkways to link buildings together for a project under construction
- Alexander had them grow grass in the space.
- Months later, people going from building to building had naturally created trails in the grass – and these were where Alexander told his contractors to lay down the walkways.

# Place Users in Control - Before



# Place Users in Control - After



# Place Users in Control

## Accommodate users with different abilities & skill levels (**Accessible**)

- Accessibility issues were not researched or regulated for the Web in the 90's
- Web Accessibility Initiative – World Wide Web Consortium (W3C), published the Web Content Accessibility Guidelines (WCAG 1.0, 1999).  
Most recent guidelines – WCAG 2.0 (2008)
- Strategies, guidelines, and resources to help make the Web accessible to people with disabilities
- Used internationally as definitive guidelines on how to create accessible websites

# Golden Rules of Web Design

## Reduce Users' Memory Load

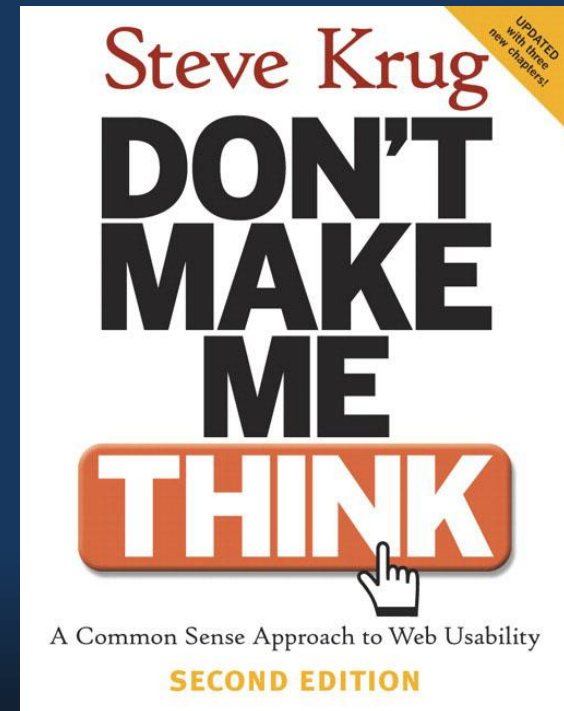


# Reduce Users' Memory Load

Don't make users work/think hard to use a website



“Don't Make Me Think”  
Steve Krug



# Reduce Users' Memory Load (Part 1)

Relieve short-term memory  
**(Remember)**

Rely on recognition, not recall  
**(Recognition)**

Provide visual cues  
**(Inform)**

Provide defaults, undo, and redo  
**(Forgiving)**

# Reduce Users' Memory Load (Part 2)

Provide interface shortcuts  
**(Frequency)**

Promote an object-action syntax  
**(Intuitive)**

Use real-world metaphors  
**(Transfer)**

Use progressive disclosure  
**(Context)**

Promote visual clarity  
**(Organize)**

# Reduce Users' Memory Load

## Relieve short-term memory (**Remember**)

- **Magical Number Seven, Plus or Minus Two (George Miller, 1956)**
- Enter data only once – Don't ask for data users just saw or entered
- Limit number of choices at any level
- Organize, group items together (“Chunk”)
  - Phone numbers: 1234567 vs. 123-4567
  - Credit card numbers:  
371536357202119 vs. 3715 363572 02119

# Reduce Users' Memory Load

## Provide visual cues (Inform)

Users should always know:

- Who they are (Login information)
- Where they are
- Where they've been
- Where they can go







Baldwin  
© Mike Baldwin / Corridor

# Reduce Users' Memory Load

Provide visual cues (**Inform**)

Who I am



Hi, theomandel! (Not you? [Sign in](#))

Categories ▾

Motors

Stores

Daily Deal

[Home](#) > [Buy](#) > [Books](#) > [Textbooks, Education](#) > **Search results**

Where I can go

Where I've been

Where I am

# Golden Rules of Web Design

## Make the User Interface Consistent

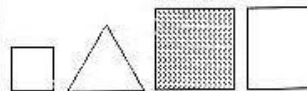
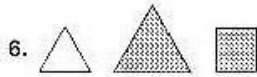
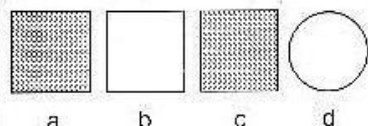
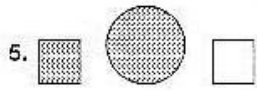
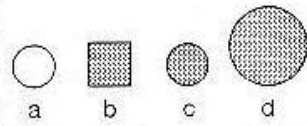
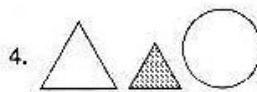
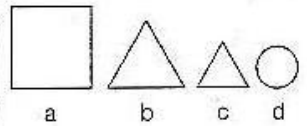
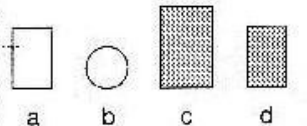
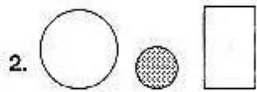
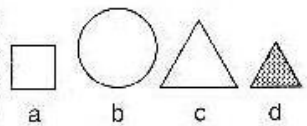
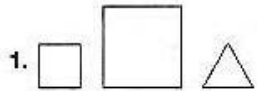
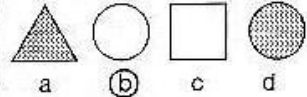


# Make the User Interface Consistent

Users organize and get meaning from interface patterns

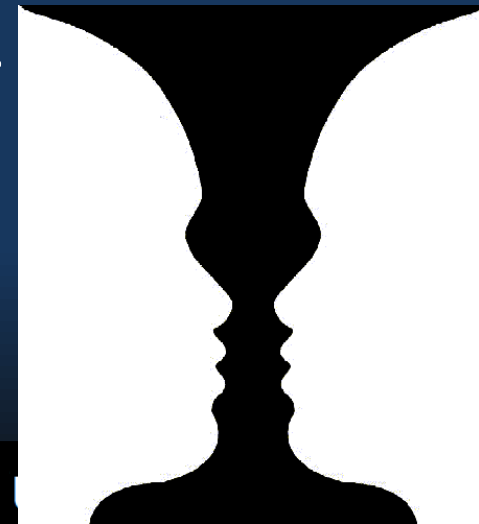
## Visual Thinking

Complete the patterns in the problems below. Circle the letter for the shape that comes next in the pattern. Follow the sample below.



Perceptual and psychological principles:

- Pattern Recognition
- Signal Detection Theory
- Information Processing
- “Gestalt” – Wholeness



# Make the User Interface Consistent

Sustain the context of users' tasks  
**(Continuity)**

Maintain consistency within and across products  
**(Experience)**

Keep interaction results the same  
**(Expectations)**

Provide aesthetic appeal and integrity  
**(Attitude)**

Encourage exploration  
**(Predictable)**

# Make the User Interface Consistent

Maintain consistency within and across products  
**(Experience)**

## Consistency is a double-edged sword

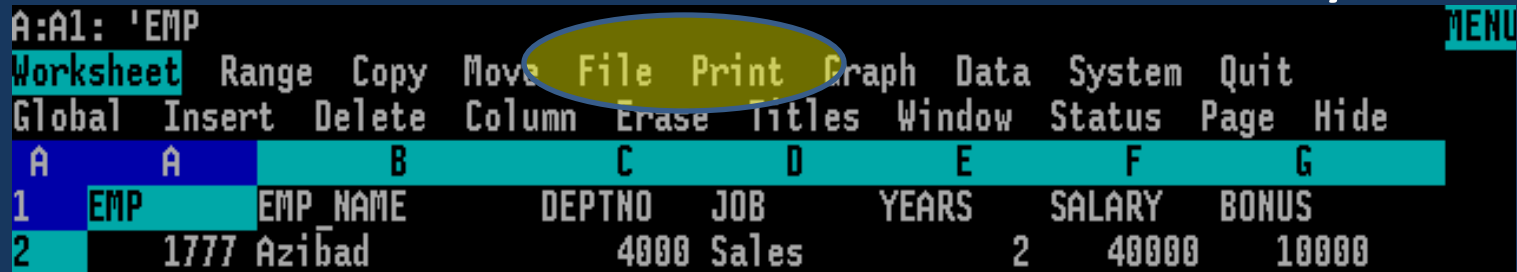
- Seems easy to follow, but can be dangerous!
- Consistency implies something (**Item B**) is consistent with something else (**Item A**)
- However, if the element isn't designed correctly at first, then what you have is:
  - A **consistently** poor design!
- **First make it usable, then make it consistent!**

# Make the User Interface Consistent

Maintain consistency within and across products  
**(Experience)**

## Historical Note: Lotus 1-2-3 from DOS to Windows

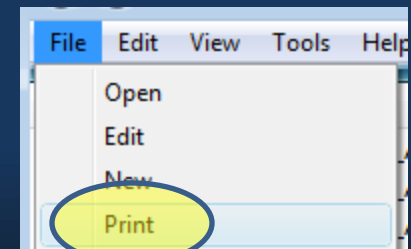
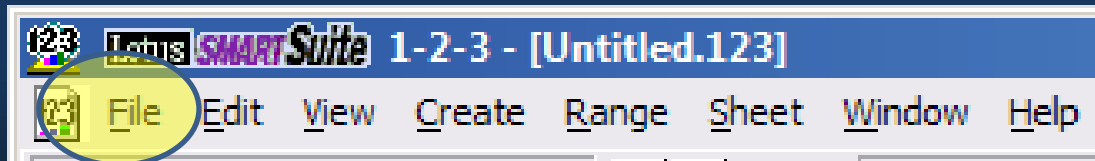
- DOS – Command-line menu bar for keyboard



A screenshot of the Lotus 1-2-3 DOS interface. At the top, a command-line menu bar is displayed with the following options: Worksheet, Range, Copy, Move, File, Print, Graph, Data, System, and Quit. The 'File' and 'Print' options are circled in blue. Below the menu bar, a spreadsheet grid is visible with columns labeled A through G and rows numbered 1 and 2. The data in the spreadsheet is as follows:

	A	B	C	D	E	F	G
1	EMP	EMP_NAME	DEPTNO	JOB	YEARS	SALARY	BONUS
2	1777	Azibad	4000	Sales	2	40000	10000

- Windows – Common menu bar across all Windows applications (File – Print)

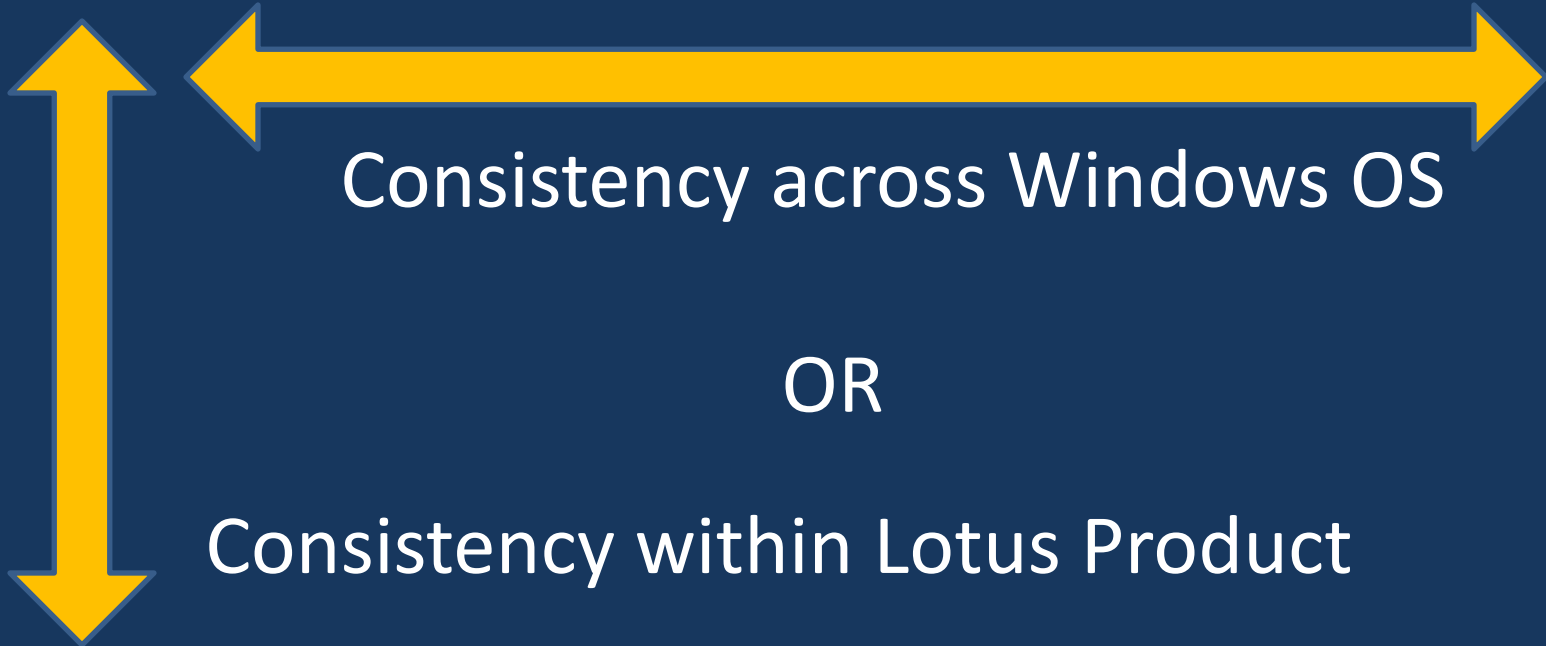


# Make the User Interface Consistent

Maintain consistency within and across products  
**(Experience)**

Lotus 1-2-3

Windows OS



Lotus 1-2-3

DOS Operating System

# Make the User Interface Consistent

## Keep interaction results the same (**Expectations**)

- Many sites and applications don't make it clear what will happen when users click a UI element
- Don't take users on a "Magic Carpet Ride"
- **Make things look like they work**  
(consistent appearance)  
**and work like they look** (consistent function)
- Link = Navigation (doesn't perform an action)
- Button = Function (performs an action)

# Make the User Interface Consistent

The screenshot shows a user profile page for 'coolhotnot'. At the top left, there are three thumbs-up icons (blue, red, grey) and the text 'Discover the Best Loved, the Most Wanted & the'. Below this is the 'coolhotnot' logo and a navigation bar with tabs: 'My Dashboard', 'View Lists', and 'My Li...'. A blue oval highlights the 'User Name & Password' tab, which is currently selected. Below the tabs is a form with the following fields: 'First Name: David', 'Last Name: Whittle', 'Nickname: Big Kahuna' (with a note: '(Your Nickname is different from your Login User Name)'), 'Address 1: 47 The Big Wave Way', 'Address 2:', 'City: Springville', 'State/Zip Code: Utah (UT) 84663', 'Country: United States', 'E-Mail: davewhittle@webworkingservices.com', 'Website: http://www.webworkingservices.com', and 'Referred By: Theo Mandel, Ph.D.'. A green oval highlights the 'Update Profile' and 'Cancel' buttons at the bottom of the form.

**Tabs/Links =  
Navigation**

**Buttons =  
Actions**

# Make the User Interface Consistent

## Links = Navigation

### The Economist [MAGAZINE SUBSCRIPTION]

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## Buttons = Actions (Functions)

Quantity: 1

 [Add to Shopping Cart](#)

or

[Sign in](#) to turn on 1-Click ordering.

 A9.com users **save 1.57%** on Amazon. [Learn how.](#)

[Add to Wish List](#) |

[Add to Shopping List](#)

**NEW LIST!** [Learn more.](#)

[Add to Wedding List](#)

[Add to Baby Registry](#)

[Tell a friend](#)

# Golden Rules – Why?

## WHY should you care about Golden Rules?

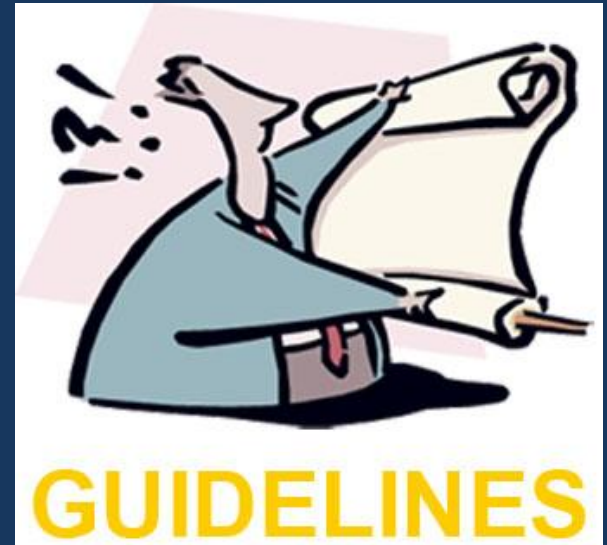
- Your users feel the pain when you break the rules
- People have basic life expectations and also expectations about the software/websites they use.
- “Before you buy software, make sure it believes in the same things you do. Whether you realize it or not, software comes with a set of beliefs built in. Before you choose software, make sure it shares yours.”  
PeopleSoft Advertisement (1996)



# Golden Rules – How and When?

## Guidelines for using Guidelines

- Know which ones are more important when making design tradeoffs
- In specific design situations, design principles may be in conflict with each other or at odds with design goals and objectives
- Principles are not meant to be followed blindly – they are meant as guiding lights for sensible interface design



# Summary

## Final Thoughts and Things to Remember:

- “Do things *for* and *with* your users, not *to* them.”

## Pay it forward, don't pay it back!

- “Don't do to others what others have done to you. Remember the things you don't like in software and websites you use. Then make sure you don't do the same things to users of interfaces you design and develop.”

# Questions/Discussion

## The **(New)** Golden Rules of Web Design

Website:



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User eXperience <sup>Ru</sup> 2009

# The (New) Golden Rules of Web Design



Or, why we should **still** follow the (Old)  
Golden Rules of Interface Design