CSc 238
Human Computer Interface Design

Part II Making Well-behaved Products

Chapter 11

Orchestration and Flow

ABOUT FACE
The Essentials of Interaction Design
Cooper, Reimann, Cronin, and Noessel
Flow and Transparency

How to *avoid* the interrupt of productive concentration (work) of users.

“ Interacting with software (especially business software) is a pragmatic exercise”

**DESIGN PRINCIPLE**

No matter how cool your interface is, less of it would be better.

When a product interacts well with a person, interaction mechanics disappear, leaving the person face to face with his objectives, unaware of the intervening software.
Harmonious Orchestration

All elements in an interface should work together coherently toward a single goal

“When an application’s communication with a person is well orchestrated, it becomes almost invisible.”

There are no fixed rules that apply regardless of the context…

The context is the problem being solved… what a person is doing at the time or what he is trying to accomplish

A user has a mental model of a given activity or process… follow users’ mental models

… not the mechanics of how computers function
Designing Harmonious Interactions

1. No matter how cool your interface is, less of it would be better.
2. Well-orchestrated user interfaces are transparent.
3. Follow users’ mental models.
4. Enable users to direct, don’t force them to discuss.
5. Keep tools close at hand.
6. Provide *modeless* feedback.
7. Design for the probable; provide for the possible.
8. Contextualize information.
9. Provide direct manipulation and graphical input.
Designing Harmonious Interactions

11. Reflect object and application status.
12. Avoid unnecessary reporting.
13. Don’t use dialogs to report normalcy.
14. Avoid *blank slates*.
15. Ask forgiveness, not permission.
16. Differentiate between command and configuration.
17. Provide choices, don’t ask questions.
18. Hide the *ejector* seat levers.
19. Optimize for responsiveness; accommodate latency.
Less is more

Often… “we see each function or feature housed in a separate dialog of window, with little consideration for how people must use those functions together… “

“It is not uncommon for a user to use one menu command to open a window to find a bit of information, copy it and then use a different menu command for a different window to paste the information into a field.”

Typically this is the result of ad hoc updates by different teams in different organizational silos.
Less is more

Elegance… a novel, simple, economical and graceful way of solving a design problem

Just because the software inside an interactive product is complex does not require the user’s interaction to also be complex

Elegance and simplicity are crucial attributes for technology to “effectively serve human needs.”
Less is more

“A minimalist approach to product design is … tied to a clear understanding of purpose – what the user of a product is trying to accomplish using the tool.”

Without a sense of purpose, interactive products are just a disorganized jumble of technological capabilities.”
Enable users to direct, don’t force them to discuss.

“… developers imagine the ideal interface to be a two-way conversation with the user”

The ideal interaction is NOT a dialogue with the software!

The user is “interacting” with a tool!

“When a carpenter hits nails, he doesn’t discuss the nail with the hammer; he directs the hammer onto the nail. He doesn’t want to discuss the nail with the hammer.”
Almost

The pie chart is the improvement in Windows XP and Vista... but you need to request a Properties dialog box to get this.
Avoid blank slates!

• So I change the style… but the next time around I have to do it again!

• How do I permanently get rid of the “Reviewing” tool bar in Word?

• Why not have the software remember the frequently and recently used styles or templates and make those the defaults?
Provide choices, don’t ask questions!

• Dialog boxes ask questions!
• Toolbars offer choices.
• The confirmation dialog stops everything… and demands an answer – even if it is “OK!”
• What users think of the software and its developers:
  – Ignorant
  – Forgetful
  – Weak
  – Lacking initiative
  – Unable to fend for itself
  – Fretful
  – Overly demanding
Choice are important, but…

… making choices is not the same as being interrogated by the application in a “modal” fashion

Think of driving a car… drivers make sophisticated choices without being confronted with a dialog box and the need to indicate a choice.
Provide modeless feedback

No macros are currently recording

Proofing errors were found
Hide ejector seat levers

**CODING HORROR**
programming and human factors

Windshield Washer  FM Radio  Ejector Seat  Cabin Lights
Disturbing the users sense of flow... waiting

When?

The application processing large amounts of data or waits for access to remote devices (servers, printers and networks)

Optimize for responsiveness *but* accommodate latency

Users’ perception of response time:

– Up to about 1 second, users feel system is responsive
– Up to about 10 seconds, users clearly notice the system is slow… and their work flow is interrupted
– After about 10 seconds, the users’ attention is gone
Motion, Timing and Transitions

“Motion is a powerful mechanism for expressing and illustrating the relationships between objects…”

…especially on mobile devices (including e-readers), where the form factor limits what can be shown on screen.

The goal being to support and enhance the user’s state of flow.

Animations and transitions should help:

• Focus user attention in the appropriate place
• Show relationships between objects and their actions
• Maintain context during transitions between views or object states
• Provide the perception of progression or activity (such as through progress bars and spinners)
• Create a virtual space that helps guide users from state to state and function to function
• Encourage immersion and further engagement

Microinteractions, Dave Saffer (O’Reilly, 2013)
Guidelines for creating interactions involving motion & animation

• Short, sweet and responsive (… less that a second to retain a felling of responsiveness)

• Simple, meaningful, and appropriate
  … to feel like real physical interactions, mimicking motion attributes such as inertial, elasticity, and gravity
  not so natural and smooth… with iOS 7. Double click the Home button to show the screen with running and recently used apps.

  Each app icon will have a sample page above it. Flick up on the page (not the app icon) and the page will fly away and the app icon will disappear. This quits that app

• Natural and smooth
The Ideal of Effortlessness

… more than just delivering useful functionality
Design the different functional elements to enable users to achieve a sense of flow as they go about their business

… success means users hardly even notice the interfaces (nor do they care)

… and give the application the “aura of effortlessness”