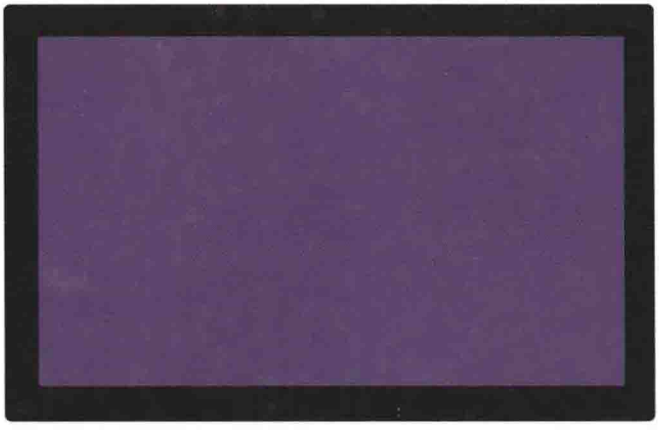
Tania Schlatter | Deborah Levinson

Visual Usability

Principles and Practices for Designing Digital Applications



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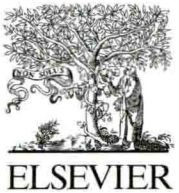

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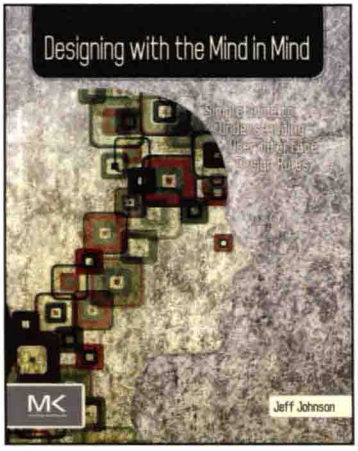

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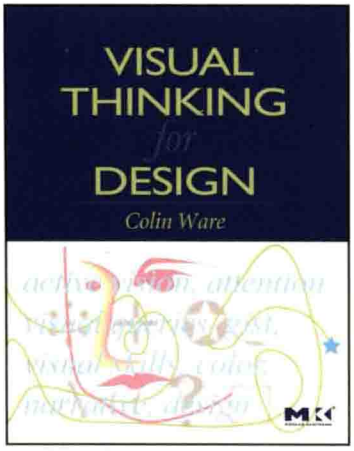

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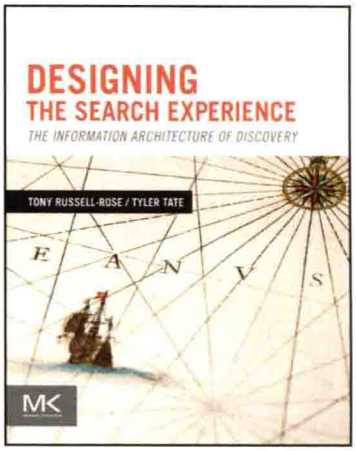

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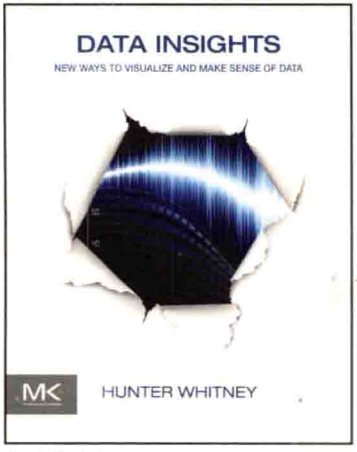

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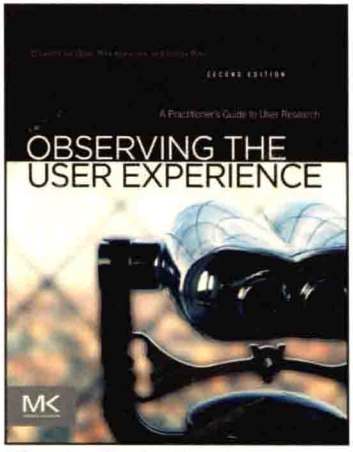

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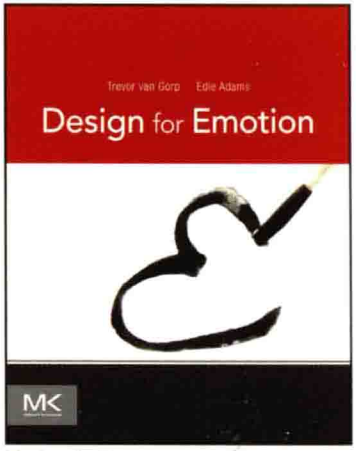

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About the Authors

Tania Schlatter is a visual designer equally interested in content, form, and people. She designs interfaces and communication systems that help people by combining user-centered and visual design techniques and applying them to complex applications.

Tania has been practicing design for more than 20 years. Her formal design study includes an M.Des. in human-centered communication design from the Institute of Design in Chicago; a summer with Paul Rand and Armin Hofmann in Brissago, Switzerland; and a BFA in graphic design from Boston University. She served as the first experience design chair for the AIGA at the local level. Tania currently teaches interactive information design to graduate students at Northeastern University in Boston. Tania can be reached on Twitter at @taniaschlatter.

Deborah A. Levinson is a user interface designer with over 16 years of expertise helping designers, engineers, and communications professionals find common ground and build successful digital applications. A former webmaster for the Massachusetts Institute of Technology, Debby is also a coauthor of *The MIT Guide to Teaching Website Design*, published by MIT Press in April 2001. She and Tania co-own Nimble Partners, a Boston-area user experience and user interface design firm. Debby can be reached on Twitter at @nimblepartners.

The year this book was written, Tania and Debby worked with the founder of Catapult.org to define the site's user experience and administrative interface; with researchers at MIT's HyperStudio on interfaces for social annotation; with CafePress.com; and with a software firm on a suite of applications utilizing artificial intelligence and labor data.

Introduction

"Visual communication of any kind, whether persuasive or informative ... should be seen as the embodiment of form and function: the integration of the beautiful and the useful."

—***Paul Rand,*** *A Designer's Art, p. 3*

Digital applications are designed for use. They help people get things done, whether purchasing a gift, conducting research, processing patients, or managing systems. They're highly interactive. They display content pulled from databases. They communicate with other systems. They're dynamic, and change without our touching them. They often enable more than one type of activity, such as finding and managing patient records.

As designers who focus on user experience for complex applications, too often we see applications that either look great or are highly functional—but not both. As these applications become the primary tools for what we do at work, how we manage our lives, and how we socialize and entertain ourselves, we believe the gap in form and function can and must be closed.

We see a lot of potential. What makes these applications challenging to design is also what makes them compelling to use—real-time access to data. Compare managing household finances in a desktop spreadsheet program to managing them online with Mint.com: the spreadsheet provides a static view of your current status, and you must manually enter information about your bank accounts and spending. By contrast, Mint.com imports up-to-the-minute data about your finances and uses charts, projections, and recommendation tools to provide highly visual, interactive ways to explore not just where you are now, but how your spending and investments could affect you in the future.

The challenge

When designing applications, we know firsthand how challenging it is to focus both on aesthetics and functionality, even when everyone involved wants a great interface. Team members often come from different disciplines. Language and ideals differ and conflict. Roles overlap. Education hasn't kept up with the pace of change: graphic design training teaches how to create "beautiful" or "innovative" interactive designs, but that isn't enough to guide the design of complex, visual systems; and computer science usability courses don't yield competition-crushing, desirable interfaces.

The ubiquity of digital applications has diluted and washed away early conventions we depended on to help us design and use web-based systems. The number of technical platforms and devices that applications are developed on and for has resulted in a dizzying set of rapidly evolving standards and patterns. The days of relying on blue, underlined hyperlinks are gone. Today, there's no single pattern of use, and no unified visual language for application design. All this change makes designing applications a free-for-all, and using them an ad-hoc experience.

While we have no desire to return to the straightjacket of blue, underlined links, we want the applications we design and use to be more than merely usable. Clients come to us when they realize their functional applications need to look more professional or are expensive to support because they're hard to use—in short, when they realize that better-designed interfaces can improve customer satisfaction and set them apart from their competition. In the offline world, retail giant Target changed the discount big-box retailing model by using design to differentiate its products and stores. Most data-driven applications are a bit like standard big-box retailers: they aren't exciting, but they're part of life, and provide what's needed to a lot of people. They can be improved beyond the drab standard with design grounded in principles of aesthetics and an understanding of people—what we call *visual usability*.

Sending the right signals

Interfaces mediate communication and interaction through screens and networks. In this automated environment, there's a need for visual language made up of signs and symbols to inform and provide

direction and feedback. Aaron Marcus called for a "visible language" in his ahead-of-its-time book, *Graphic Design for Electronic Documents and User Interfaces*, saying, "A primary technique to achieve improved visual communication is to use clear, distinct, consistent visible language. Visible language refers to all the verbal and visual signs that convey meaning to a viewer."[1]

Complex visual interfaces may have many messages to convey on a single screen. The challenge for design is to provide order, direction, and pattern to help people process and derive meaning from what they see. Communication involves a sender, a message, a signal that conveys the message, and a receiver or viewer who interprets the message. Thinking about these components sheds light on the fact that designers and developers don't control the entire process. In interface design, selecting elements with user expectations in mind, and combining those elements with visual signals people expect and understand, makes it more likely an audience will successfully interpret a message.

We don't need to be entertained when using applications to track packages or configure client accounts, but we do need interfaces that help us successfully manage increasing complexity, and keep our humanity in mind.

Approach and organization

This book focuses on presentation of what the user sees, and how to design that presentation for understanding. It aims to help anyone involved in creating digital interfaces define and defend a rationale for design decisions based on heuristics and best practices from a variety of languages and disciplines. It is grounded in usability research, perceptual psychology, web design, typographer's practices, visual design principles, and communication theory. Rather than pull together what has been well described elsewhere (e.g., user experience best practices), we refer to and reference these principles, and use them as design requirements. Our goal is to help you design complex application interfaces by providing a framework—what we call the *meta-principles*—to inform design decision-making that

[1] Marcus, A. *Graphic Design for Electronic Documents and User Interfaces*, p. 2.

bridges form and function, the beautiful and the useful. We outline the tools of interface design, show you how to use them successfully, and provide steps and tips to guide you throughout the design process.

Part I: The meta-principles

In the first section of the book, we introduce the three core meta-principles of consistency, hierarchy, and personality. There are many design principles—the second edition of *Universal Principles of Design* lists 125 of them!—but consistency, hierarchy, and personality are the ones we see that most strongly affect application design.

You can think of the meta-principles as if they're part of a language. *Consistency* and *hierarchy* are the grammar people learn while using your application: the basic elements that define how the language is spoken. The "words" you speak (i.e., the visual design characteristics you choose to convey your message) create your application's *personality*. While technology that affects interfaces changes, these underlying meta-principles hold true.

Beginning in Chapter 3, we use a case study—a sample redesign of the United States Department of Agriculture's food- and fitness-tracking application, SuperTracker[2]—to show how the meta-principles apply.

Chapter 1: Consistency

What does *consistency* mean in the context of visual design for applications, and how does it help people? Like spoken language, visual language needs to define conventions and use them consistently to be understandable. Chapter 1 includes a framework for understanding what people expect, and guidelines for how to apply visual design tools to create consistency.

[2] The USDA was not involved with our SuperTracker redesign, which was done purely as an example for this book.

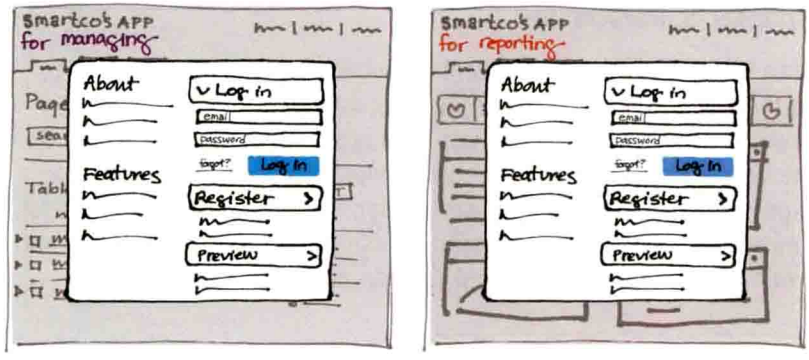

Figure I.1 Related applications in a suite will be easier to use if they share conventions, such as consistent login/registration areas and positioning and treatment of primary buttons.

Chapter 2: Hierarchy

How do you make sure people notice what you need them to? Visual hierarchy is the perception and interpretation of the relative importance of elements on the screen. Chapter 2 explains the role of hierarchy in interface design, how to define it, and how to ensure your application uses hierarchy appropriately and informatively.

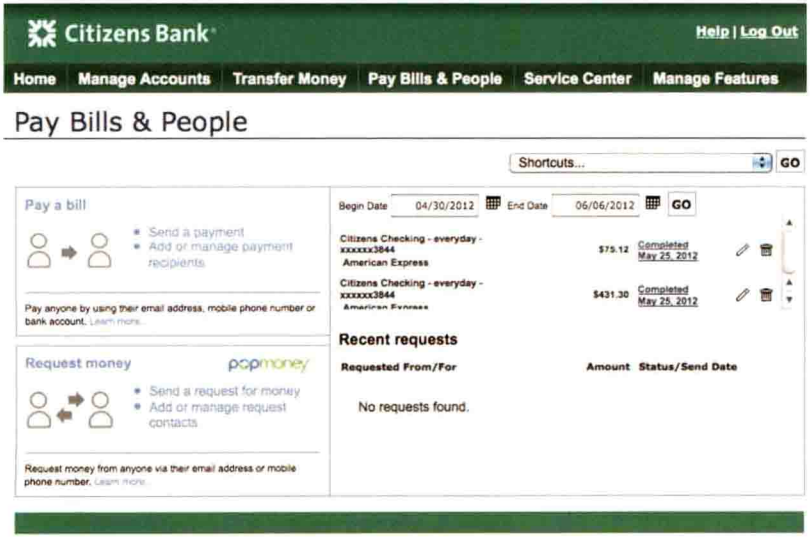

Figure I.2 Unclear hierarchy on a banking application screen. The eye is drawn to the tinted area at the top left, but pulled away by the strong use of contrast and greater real estate in the "Recent payments" area. Ideally, the "Pay a bill" and "Pay a person" sections would be more visually prominent, because that's what people have come here to do.

Chapter 3: Personality

John Maeda said, "Nobody wants objects or experiences that just do the job—they want something they *want* to do the job with."[3] Appeal affects perception of use.[4] An application's personality (i.e., the visual aspects that inform how people perceive it) helps build expectations about what the application does and who it's meant for. Chapter 3 discusses how to define personality and its attributes, and how to extend them throughout your application.

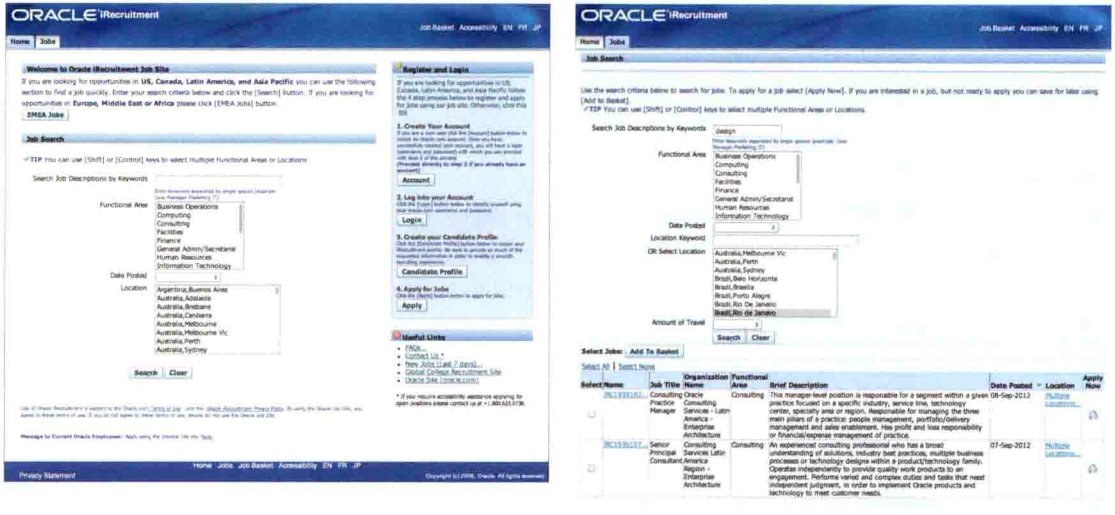

Figure I.3 The lack of personality on Oracle's online recruitment application is a missed opportunity to inspire potential candidates.

Part II: The visual usability tools

The second section of the book defines the tools of application interface design as layout, color, type, imagery, and controls and affordances. We call these *tools* because designers and developers manipulate them to communicate messages and functionality. How the tools are manipulated and presented—their characteristics—affect interpretation.

[3] Maeda, J. (2012, Sept. 21). If Design's No Longer the Killer Differentiator, What Is? *WIRED*. Retrieved Nov. 13, 2012, from *http://www.wired.com/opinion/2012/09/so-if-designs-no-longer-the-killer-differentiator-what-is/*.

[4] The more appealing users find a website, the more usable they perceive it to be. Trachinsky, N. Aesthetic and Apparent Usability: Empirically Assessing Cultural and Methodological Issues. *CHI 97 Proceedings*, Atlanta, 1997, pp. 115–123.

These topics are common, but addressing how to use them in complex applications to help people is not. Part II focuses on applying each tool strategically to help people understand your application. A section in each chapter shows the evolution of the SuperTracker case study project, which began with mobile application design and extended to redesigning for the web.

Chapter 4: Layout

Where should the button go? Chapter 4 addresses positioning, alignment, white space, and grids, which affect perception of what goes with what. It also addresses practical considerations of layout at all levels of new and redesigned applications.

Chapter 5: Type

How many fonts do you need? How do you choose? This chapter introduces typography basics, reviews how to select the right fonts for your application, and supplies rules of thumb for professional-looking type.

Chapter 6: Color

Isn't color subjective? Why not just use blue? There's logic to choosing and using color strategically. Chapter 6 shows how to use color to help people know where they are, what they can do, and associate appropriate attributes with your application. It also covers how to choose a color palette, and how to decide where to use different colors.

Chapter 7: Imagery

What kind of images, if any, are appropriate for your application? Chapter 7 reviews the types of imagery that apply to applications—logos, photography/video, illustration, icons, patterns—and outlines when each is useful. Examples show how to use imagery to create contrast, draw attention, and provide valuable information without overwhelming the user.

Chapter 8: Controls and affordances

How do people know what they can do? Controls are interface elements and methods people use to interact with your application,