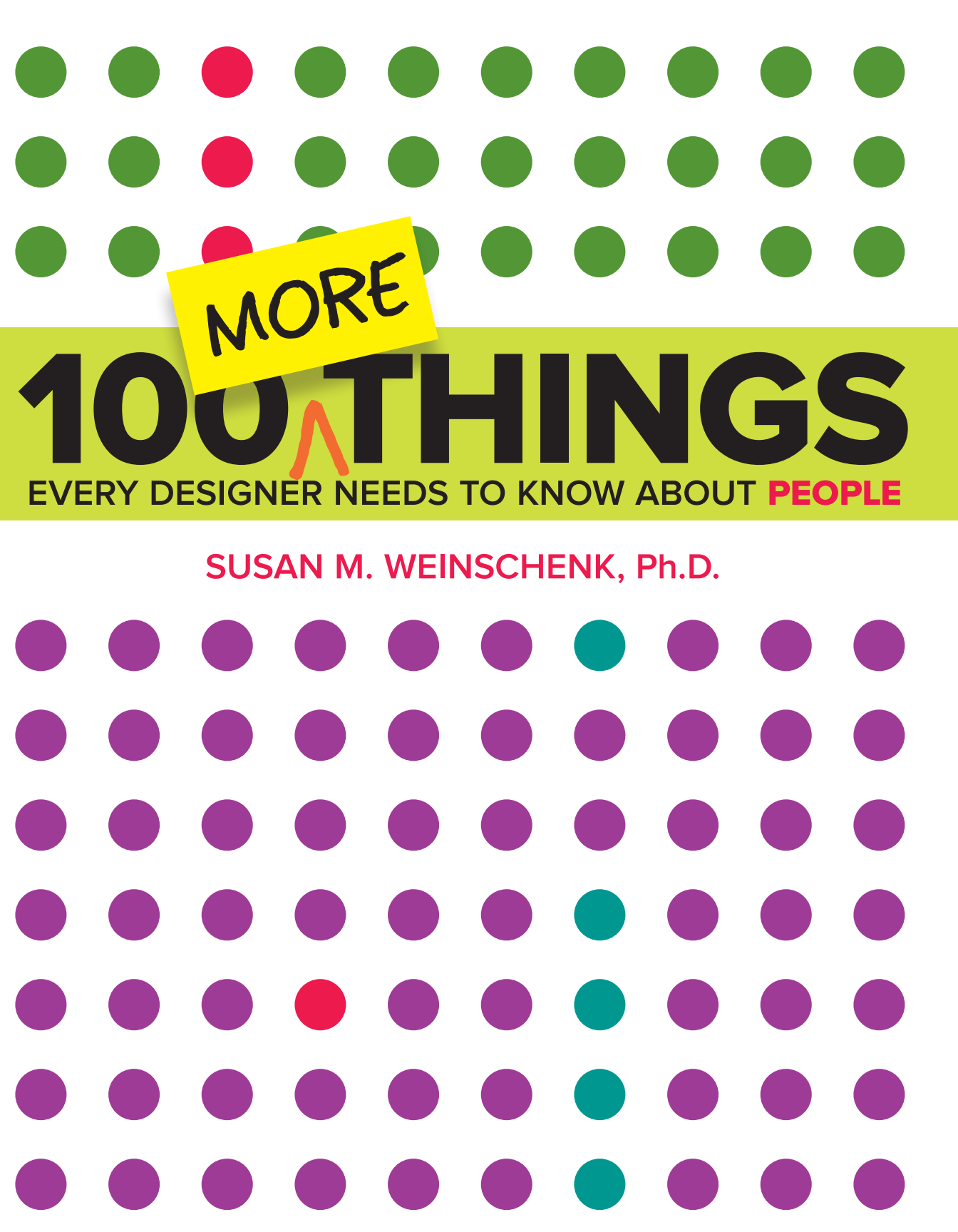
MORE
100 THINGS
EVERY DESIGNER NEEDS TO KNOW ABOUT PEOPLE
SUSAN M. WEINSCHENK, Ph.D.

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New Riders
VOICES THAT MATTER™

100 MORE **Things Every Designer Needs to Know About People**
Susan M. Weinschenk, Ph.D.

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Susan Weinschenk has a Ph.D. in psychology and more than thirty years of experience as a behavioral scientist. She is a consultant to Fortune 1000 companies, start-ups, government agencies, and nonprofits. Her clients call her “The Brain Lady,” because she applies research on brain science to predict, understand, and explain what motivates people and how they behave.

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THE DESIGNER AS BEHAVIORAL SCIENTIST

You wake up in the morning and while you sip your coffee, you slip on your headset. A few gestures with your hand and fingers and you are skimming the news and your calendar on the screen that has appeared in front of you. As you walk to the train to go to work, you run your hand down your arm to call someone at your office.

When you get to work you might spend some time in the immersive room. Data appears on a screen, you hear sounds, and feel pulses through the vibrating floor, or a vest you have put on over your clothes. Your unconscious processes these sensory data so that you can make decisions. That's not so far in the future. That's what is about to become mainstream in the next 1–2 years.

This is a great time for designers—there are so many things that can, and need, to be designed! We still need software and websites and mobile apps, and now we also need to design how people will use technology that lives in clothing, headsets, and robots.

Technology is growing and changing, and what we know about people has also exploded. When I wrote the first *100 Things Every Designer Needs To Know About People,* it was 2011. I had summed up the essential information on what designers need to know about people in those 100 things. If you had asked me then if I thought there were another 100 things people need to know, I would have probably laughed and said, of course not!

But a lot has happened in the last four years. Our understanding of the brain and the body has exploded almost as fast as the technology has exploded. Now we know that:

- How we read online is different than how we read text on a page.
- We are not born with brains that know how to read—our brains repurpose other areas of the brain to learn how to read.
- Our unconscious processes big data better than our conscious mind does, and we can actually use something called sensory addition to feed data to the unconscious.
- Our peripheral vision decides where our central vision should look.

- Older people aren't slow to learn and use technology because they can't remember, but more because they aren't confident about their memories.
- People who are blind can see by hooking up a camera to their tongues.

And, well, 94 other amazing things.

I hope you enjoy this book as much as I've enjoyed researching and writing it. I can't wait to see what we all design in the next few years. And I hope that this book will help you design so that your creations fit the way people learn, work, think, and play.

Susan Weinschenk, Ph.D.
Edgar, Wisconsin, USA
July 16, 2015

4 PERIPHERAL VISION DETERMINES WHERE CENTRAL VISION SHOULD LOOK

It's 11:00 a.m. on a Saturday and you're at home in front of your laptop, browsing the Internet. You open your favorite news site and scan the headlines. You click on a story and read for a bit, then go back to the main page and scan some more. You choose another story, look at the picture, and read some more—just normal scanning and reading online behavior, right?

What you may not realize as you do this is that your two types of vision, central and peripheral, are multitasking.

BUT ISN'T MULTITASKING A MYTH?

If you've read any of my other books or blog posts, you know that I'm fond of saying that multitasking doesn't exist; most of the time what people think of as multitasking is actually fast "task switching." People switch really quickly from one thing to another, from one focus to another. This quick task switching takes a toll on attention and mental processing.

But central and peripheral vision multitasking is different. People really are capable of multitasking when it comes to vision.

A QUICK DEFINITION OF CENTRAL AND PERIPHERAL VISION

The fovea is a small depression at the back of the retina that affords very clear, detailed vision. Foveal vision, or central vision, covers only a very small area—about the size of two thumbnails—but it takes up half of the processing in the brain's visual cortex.

The rest of the visual field is peripheral vision. Peripheral vision takes in a much broader and larger view. The visual cortex can process both central and peripheral vision at the same time.

EYES TAKE LOTS OF VISUAL SAMPLES AT THE SAME TIME

People take in visual information in little bites. This is called visual sampling. Central and peripheral vision are working at the same time. When you're scanning that page online and a headline grabs your attention, you move your head and your gaze so that

the headline is in view of your fovea—your central vision. But how do your head and eye know to look at that exact spot?

PERIPHERAL VISION CALLS THE SHOTS

Casimir Ludwig, J. Rhys Davies, and Miguel Eckstein's research (2014) showed that it is peripheral vision—what it sees, and how that information is processed in the brain—that tells the central vision where to focus next. This is a largely unconscious process. People are consciously aware of their central vision and what it's processing, but they're likely *not* consciously aware of what's in their peripheral vision, or that their peripheral vision is calling the shots for where to look next.

TWO VISIONS ARE BETTER THAN ONE

You would think that all this multitasking would slow down visual processing, but Ludwig's research shows that central and peripheral vision are processed independently to a large extent, and, therefore, both can be done quickly.

DON'T BASE EVERY DESIGN DECISION ON EYE-TRACKING STUDIES

Most eye-tracking research measures only central vision; it doesn't address what's going on in peripheral vision. Yet there's a tendency to make design decisions based on eye-tracking results ("No one looked at this picture, therefore it's not effective and we should remove it."). Now that you know that peripheral vision is calling the shots, you can avoid making decisions based solely on eye-tracking data.

PAY ATTENTION TO PERIPHERAL VISION

Since peripheral vision directs where central vision should go, it's important to pay attention to what people will see in their peripheral vision when they focus on certain parts of a page with their central vision. Peripheral vision isn't just dead space to be left blank. As a designer, you need to design flexibly to allow for different monitor sizes and devices (large screen, laptop, tablet, smartphone). There's a tendency to use only the middle part of the screen and leave the edges blank. This might be easiest for creating one screen that translates to multiple devices, but it means that you're leaving peripheral vision with nothing to look at. Figure 4.1 shows a website for a restaurant that makes full use of peripheral vision to grab attention and help people know what the site is about.

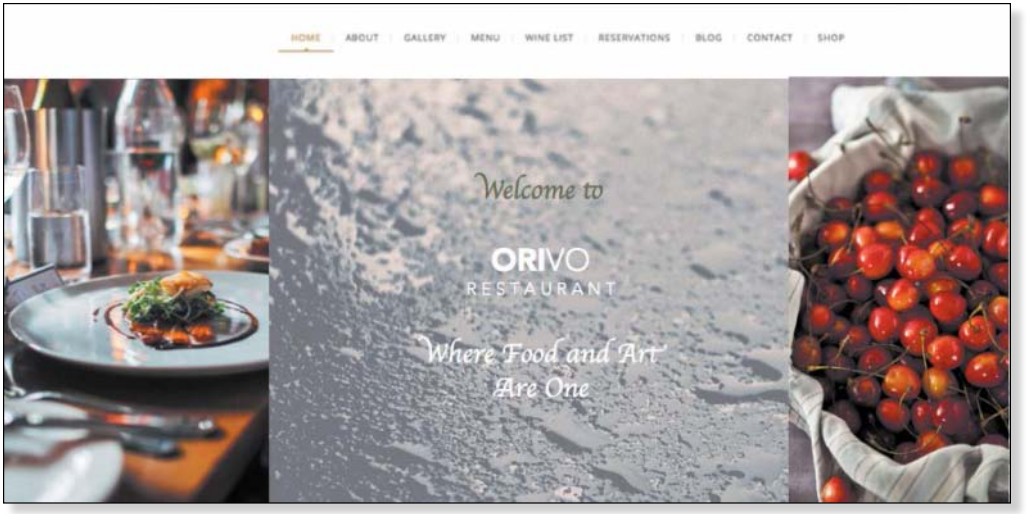

FIGURE 4.1 A website that makes full use of peripheral vision.

Takeaways

- ☑ **Don't base design decisions solely on eye-tracking studies.**
- ☑ **Don't leave peripheral areas blank. Instead, include information that helps people decide where to look (with central vision) next.**

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