CHAPTER THREE

TEXT

LEARNING OBJECTIVES

After reading this chapter, you will be able to:

- Distinguish between different categories of fonts
- Identify the proper application of those different categories
- Appreciate font "personalities"
- Make informed choices about type size
- Calculate appropriate line spacing
- Maximize the few bits of text in a graph
- Know what text to remove from a graph

As I give one last look at a report for work, my usual process is probably similar to yours. I spend an afternoon fussing with the layout and putting a polish on the report before sending it off to my boss for one last review. I did just that with a report page similar to the one shown here in Figure 3.1.

I am using this page as my example because it is probably where I spent the most time. It was important to me (and now I am really letting on how far I am willing to go) that this table contained rows of equal height. This required some nudging, squishing, and testing until the table was just right. Then I emailed it to my boss and asked him to give it a last inspection before I shipped it out to the client.

Guiding Ideas

Text fonts are used for narrative text

Headings and callouts are emphasized

Long reading is in 9- to 11-point size

Line spacing is 11 to 13 points

No more than three fonts are used

Body text has stylistic uniformity

Bullets are slightly less thick than text

Figure 3.1   A painstakingly formatted report page

Appendix

The table below shows demographic composition over the duration of the initiative. Ultimately the changes show that the initiative's primary target population has grown older, more female, and more racially diverse.

Race (by percent)

	2010-11	2011-12	2012-13	Overall Change (in percentage points)
American Indian or Alaska Native	2	4	2	0
Asian	8	10	9	+1
Black or African American	12	13	14	+2
Hispanic/Latino	8	6	11	+3
Middle Eastern	0	2	4	+4
Multiracial	5	7	10	+5
Native Hawaiian or Other Pacific Islander	0	0	0	0
White	65	58	50	-15

As you can see from the table, the initiative has yet to attract any Native Hawaiian or Other Pacific Islanders, despite their representation in the larger organization population.

As we stated in the report, while it appears that the initiative attracted and then lost some who were American Indian or Alaska Native, in reality those participants were a part of one division that was purchased by another organization in late 2012.

Finally, while it may appear from the percentages that the white population decreased, their raw numbers were steady while participation increased from other racial groups.

Instead of sending it back to me, he saved me a step and passed the report directly to our client. I am an easygoing person. I was not bothered by his actions, but I did want an approved and finalized copy of the report for my own records, so I opened up his attachment, and a version similar to Figure 3.2 was what I saw.

At that point, I freaked out. Now, if you aren't a bit of a nerd about these things, which I admit I am, you may not immediately notice the differences between these two versions of the report. First of all, the perfect spacing in the table was ruined in the second version, in that one of the rows grew in height when a word in the first column (Islander) jumped down to a third line. Second, the heading and narrative fonts both look different. And, to add insult to injury, the last paragraph on my original page walked the plank in the version in Figure 3.2.

Figure 3.2   How the report page looked to the recipient

Appendix

The table below shows demographic composition over the duration of the initiative. Ultimately the changes show that the initiative's primary target population has grown older, more female, and more racially diverse.

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As we stated in the report, while it appears that the initiative attracted and then lost some who were American Indian or Alaska Native, in reality those participants were a part of one division that was purchased by another organization in late 2012.

Our report was struck by a very annoying phenomenon called font substitution. I am sure it has happened to you, too. You email your poster to your copresenter and when she receives it, the formatting is wacky. You plug your flash drive into the conference session room laptop only to discover it does not look at all how you intended. You upload your slides to the webinar platform and nothing looks right. By the end of this chapter, you will have several strategies on hand to ensure that you are not plagued by these same issues.

What Is Type?

The term *type* refers to the shapes of individual letters and to the stylistic variations that contribute to legibility in different contexts. I love to think about how there is a type designer sitting in a foundry somewhere in the world, crafting a new lowercase letter *t* to improve on the 13 *t*'s I already used in this sentence. For most of us, at first glance the differences in the angle of the curvature at the top of a *t* do not seem like a big deal. Yet we happily and usually unknowingly are on the receiving end of such careful thought all around us, every day. We do not need to worry ourselves too much with the specifics of creating letter shapes. We just need to know how to use them well in order to present data effectively.

Most of us refer to this topic area using the word *font.* I do. During my dissertation study, when I developed the four main topic areas that are now sections of this book, the graphic designers on my review panel disagreed. The conversation went like this:

Me: So, I'll break out these principles into Graphics, Color, Font, and Arrangement.

Peter: You can't call it font. It's called typeface.

Me: Typeface? Who says that? Everybody I know calls it font.

Peter: Fine, well, then just call it type. This is very different from font.

Me: Call it type?! Don't you know that in the real world there are lots of different meanings for the word *type?* I'm calling it font.

Peter: Font is what you see. Typeface is what you design with.

Me: . . .

If you relate Peter's comments to your graphic design friends, they will be impressed by how smart you are. However, for the rest of us and throughout this book, the words *font, type,* and *typeface* are used pretty much interchangeably. Don't tell Peter. And we

are going to go far beyond just type to talk about text in general and how we can work it to tell our story.

How Do I Tell These Typefaces Apart?

There are two basic types, or categories, of type: serif and sans serif.

Serif

Figure 3.3   **Serif fonts are one of the major font categories (from top to bottom: Baskerville Old Face, Georgia, Times New Roman)**
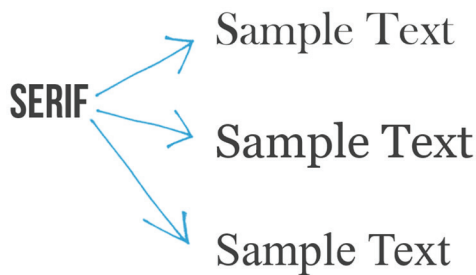
The first class of fonts is serif. The top option in Figure 3.3 is Baskerville Old Face. Now, this may sound silly, but font nerds like me enjoy a feisty discussion about how fonts have personalities. For example, the properties of Baskerville Old Face are said to reflect a professional, serious, focused, yet comfortable personality.

The next serif down the line is Georgia. Georgia's personality is known as friendly and intimate. Do you see those personality traits when you compare Georgia to Baskerville Old Face? Georgia is an effective choice for tiny print because it is highly legible, even at small sizes.

The third serif example shown is Times New Roman. Times New Roman has a reputation. It is seen as sturdy and classic. But it is a bit of a flash point for type nerds. Times New Roman is commonly used in newspapers because it is so easily read at a small size. It also was the default typeface in Microsoft Word for a very long time. For those reasons, some say it is overused, past its prime, and even a little cold.

So while these three examples are all a bit different from one another, what they have in common is that they are serif fonts.

Serif is a Latin word that means "little feet." See the little feet at the bottoms of the letters? Those feet help create an almost continual line along the bottom of a length of text, smoothing the reading process. Serif typefaces make reading more fluid (Song & Schwartz, 2008). Research consistently shows that fonts with serifs are easier to read, especially in lengthy smaller print. The APA Guide (2010) advises that serif fonts are preferred. In its style book, the Modern Language Association of America (MLA, 2009) says that the font used should be "easily readable" (p. 116) and suggests Times New Roman.

Guiding Idea

Text fonts are used for narrative text

You should probably pick a serif font for at least the body text of a written report, where you expect an audience to engage in sustained, narrative reading. In a "Guiding Idea" sidebar here, these are referred to as "text fonts" instead of "serif fonts." I promise that I am not intentionally throwing more jargon into the mix. My rationale for this will become apparent in just a few more pages.

Sans Serif

Titles, headings, and callouts may be a good place to change things up, especially since these are bound to be a larger size and shorter bursts of text. It is perfectly appropriate to choose a sans serif, or "no little feet," font in those places.

Figure 3.4 **All serif fonts have little feet at the ends of the lines that make up the letters**

Very Important Point

Guiding Idea

Headings and callouts are emphasized

Figure 3.5 **Sans serif fonts are the other major category of type—no little feet here (from top to bottom: Baskerville Old Face, Open Sans, and Jokerman)**

Sample Text

Sample Text

SANS SERIF

Sample Text

Here again is our focused friend Baskerville Old Face, starting us off at the top. It is a serif font, the first category of type.

The next one down is called Open Sans. Do you notice how it feels more open and modern? This feeling of openness and modernity comes from the fact that Open Sans is a sans serif font. Notice how its ends do not taper into smooth feet. The letter shapes cut off cleanly when the letters are sufficiently formed. Now that you are looking closely, you can see how these two types contrast.

This last font is sure fun. It is also a sans serif, called Jokerman. To me, its personality says *Fajitas Tonight,* and there may be situations where that reflection is

exactly appropriate and fits your topic, your client, or your project very well. But you clearly do not want to use it on anything longer than just a couple of words. It is way too annoying to read at any considerable length and would likely lead to abandonment, which is when readers simply give up on reading and move on to something else.

Slab Serif

So, I may have told you a small white lie earlier. There are more than two types of type. Lots more. Ask your favorite font nerd. For our purposes, we stick to the basics here, but I think you can handle the introduction of one more type of type, now that you are familiar with the first two.

Figure 3.6 **Slab serif fonts have thick, blocky feet (from top to bottom: Baskerville Old Face, Open Sans, and Rockwell)**

The font at the bottom is known as a slab serif. This particular slab serif is called Rockwell. As points of comparison, I've carried over the serif Baskerville Old Face and the sans serif Open Sans from earlier. Rockwell is similar to Baskerville Old Face in that it has those little feet—well, actually, those feet are quite large. They do not gradually narrow to a graceful finish like the serifs in Baskerville Old Face. The feet on a slab serif are thick and squared off. Rockwell, the slab serif, is also similar to Open Sans in that the lines making up the letters are of an even thickness. According to these characteristics, slab serifs are really their own type of type. How would you use Rockwell? Is it suitable for reading at length like the serif fonts? Or is it better on a heading, where more freedom and shorter passages are standard? Here's a quick behind-the-scenes way to answer those questions within your own computer.

What Am I Looking at Here?

To illustrate, this book uses two fonts: a serif called PTSerif Regular set in 9-point size for the narrative text, and a sans serif called Raleway set in 14-point size for the first-level headings and 13-point size for the second-level headings. The decorative font used on the front cover is also Raleway, but larger.

Every computer has a *Fonts* folder, but the paths to get there and the details that appear may vary. This example is what the folder looks like on my PC, running Windows 10.

Figure 3.7   Screenshot of the details for each installed font
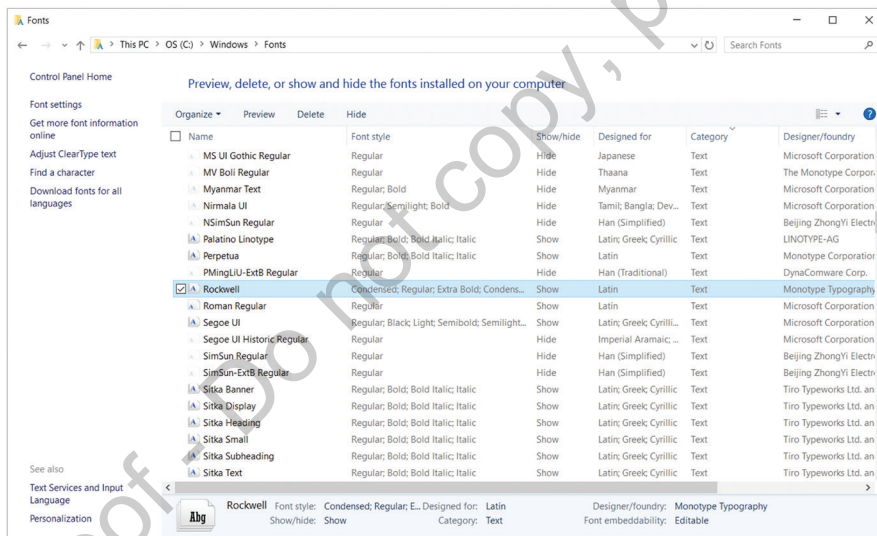
At the top you can see my navigational path. I opened my *C* drive, then my *Windows* folder, and then the *Fonts* folder. Usually the fonts in the *Fonts* folder are presented as little icons. Change the setting using the dropdown arrow in the upper right to specify the *Details* setting. So many cool details! There are the names of the foundries like the one I've envisioned, where someone is sitting at a desk playing with the curvatures on lowercase *t*'s! See the column called *Category?* Here, the operating system indicates the foundry's recommendation for the best use for each typeface.

This screenshot shows some of the text fonts (I told you it would make sense later)—these are the ones suitable for long narrative reading, and there is Rockwell. Scrolling down a bit reveals other categories, including one called *display*.

Display fonts are those fonts created to be used as titles, headings, and other report elements of that nature. You should make sans serif headings very different from the serif body font so that the headings pop right out, making report navigation easier. Display fonts are also suitable for use in slideshows, where the text is somewhat sparse and heading-like. Checking the *Fonts* folder is an immediate way to diagnose proper font usage.

In general, graphic designers suggest you pick two or maybe three fonts for your entire piece of work. Every operating system contains bunches of fonts, many of which you will probably never need in your professional reporting. There are font categories called *script* and *decorative*. On occasion these types of type might be appropriate for a single letter or one or two words in a title, but generally it's best to err on the side of legibility.

What Works for Paper and What Works for Screen?

Aside from being a useful way to add visual interest to a written page, sans serif fonts are critical for electronic projection, whether on a computer screen or a slide projector.

Serif fonts like Baskerville Old Face do not work well with an electronic screen. Go back and check out Figure 3.6. Notice how Baskerville Old Face shows variation within the line of each letter? Look at the *m* in *Sample*. The line is much thinner at the top of the bumps. That thick-thin line variation makes it very difficult to read serif fonts on the screen. The thin parts of the letters almost disappear, even when the type is greatly enlarged. For electronic screens, use sans serif fonts, which tend have lines of even thickness. Compare the *m* in the Open Sans example to that in Baskerville Old Face—the thick-thin line variation is gone. Now, check out Rockwell, the third font shown. Slab serifs also do not have that thick-thin line variation, so they are easier to read on a screen.

Therefore, when writing a report that will be read only on computer screens (this is more and more common as companies go paperless), use a sans serif or slab serif font. On-screen legibility tests suggest that Franklin Gothic, Cambria, Verdana, and Consolas are good choices, because they produce fewer errors in character recognition (Chaparro, Shaikh, Chaparro, & Merkle, 2010). Character recognition matters

when you need to distinguish a zero from an uppercase *O,* for example, or a numeral 1 from an uppercase *I* or a lowercase *1.*

Slideshow templates do not always follow these guidelines. At this moment, almost a quarter of the default font choices preloaded into the templates on my computer identify serif fonts for the main slide headings, but I think these fonts have too much thick-thin line variation to maintain legibility. If you choose to use a slide template, remember that you are in control of it. You can change the font choices, make the fonts larger, and manipulate them so that the template provides a clearer package for your data.

Changing up the font choice to match the dissemination method is how we arrive at the recommendation of using three fonts per project. The slideshow usually has two—a sans or slab serif for the headings and a different sans or slab serif for the little bits of other content on the slides. But the handout that you distribute to your audience members containing your key points should include a serif font (the third font in your package) for the narrative text.

The headings or callout points on your handout can be set in the slab or sans serif used in your slides. Using the same heading font, plus the repetition of other elements, such as color and graphics, makes it obvious that your materials belong together, represents you as a polished professional, and helps your audience engage with your content. Now that you know the basic rules about typeface, you are equipped to make informed decisions about which types of type to use where and when.

What About Stuff That Will Be on Both Screen and Paper?

Some of you are in situations where your reports or posters will be printed as well as posted online. What font should you use then? You'll need to look for a hybrid font. Calibri is one. Once people started getting more comfortable reading on-screen, they realized how bad the old Microsoft Office default font—Times New Roman—was for screen reading, so Microsoft switched it up, replacing the default with Calibri, which works well on both screen and paper.

But you can't use Calibri. Friends, Calibri screams default. It says, I just use whatever is put in front of me and don't think outside the box too much. And that's not the image you are trying to project. So keep looking for other good hybrid fonts. Georgia, for example, is a serif with thick lines, making it easily readable on-screen. That's the kind of characteristic you're looking for.

Did You Just Say I Can't Use Calibri?

Yep. Sorry, folks. Default fonts are the equivalent of using Excel default colors in your data visualizations. Everyone recognizes them as default and then makes judgments about the quality of your work. "She clearly doesn't even care." That's definitely not going to help you sell your ideas! You can and most certainly should branch out beyond the default fonts already installed on your laptop (and everyone else's). One of my favorite places to find new fonts is Font Squirrel (https://www.fontsquirrel.com). I love this site because the fonts are all free and 100% okay to use for commercial purposes. Lately I've also been using Google Fonts (https://fonts.google.com), which is additionally lovely because it suggests font pairings so you can easily snag a heading font and a well-matched text font.

You'll need to download your new font from one of those sites and then distribute it to any coauthors or teammates. Follow these steps (and perhaps check in with your IT department if you get hung up anywhere).

When the Receiving Computer Is a PC

Open your *Fonts* folder and drag the files into your email to your colleague. (Hint: Trying to attach a font from inside my email system wouldn't work; I was told that I didn't have administrator access—incorrect, Windows Help menu, incorrect.)

Your colleague will download the file as she normally would any email attachment. It's usually a zip file that looks like this:

Figure 3.8   This zip file contains the license agreement and the font files
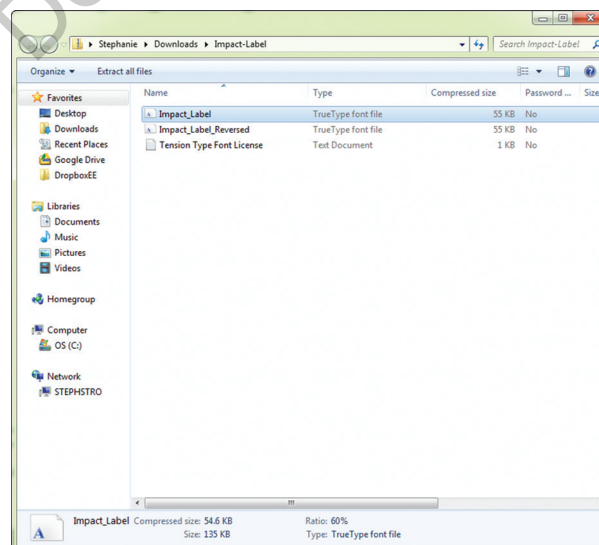
You might as well read that license agreement while you're in there. We know these fonts are all free for commercial use, but close inspection of this agreement reveals that the creator doesn't mind donations.

Then double-click on one file. It'll look like this:

Figure 3.9   This window shows how the font will look—hit the *Install* button
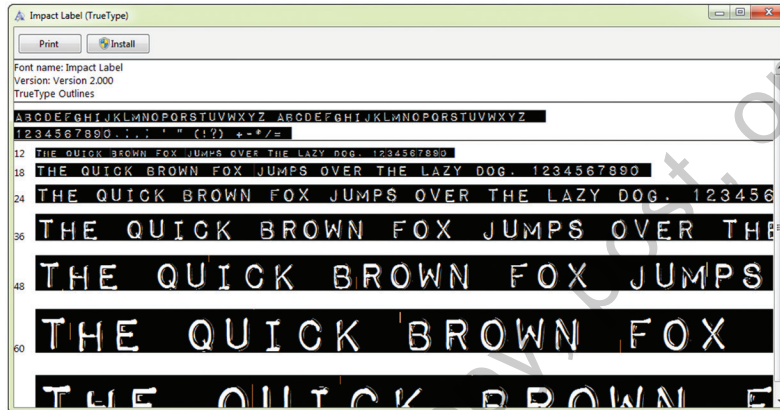
Just click the *Install* button, and it'll do its thing.

Then, when you open PowerPoint (and note—you'll want to close it and reopen before looking for the new font), the downloaded font will appear in your regular font list:

Figure 3.10   Reopen your software to see the newly installed font
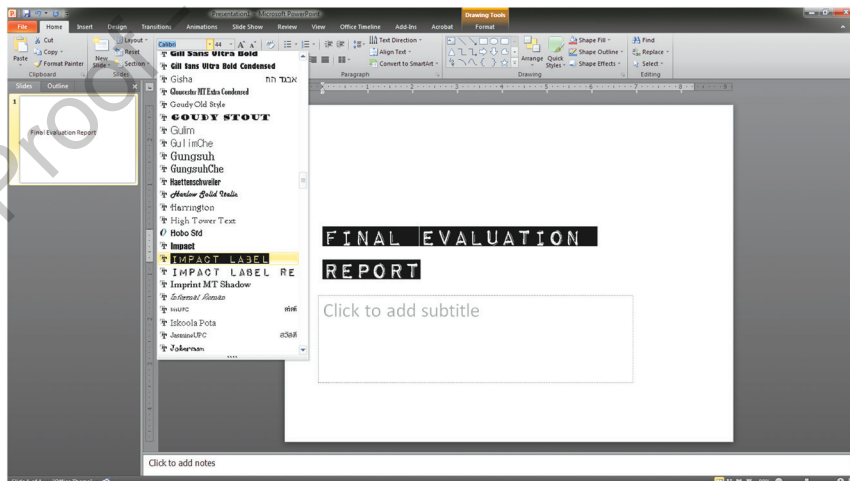
Note that the process works the same regardless of whether the sending computer is a PC or a Mac.

When the Receiving Computer Is a Mac

The sender goes through the same process—attach the downloaded font files to an email and send.

The receiver opens the email attachment. On my Mac, it opened into my *Downloads* folder:

Figure 3.11   Download the font file
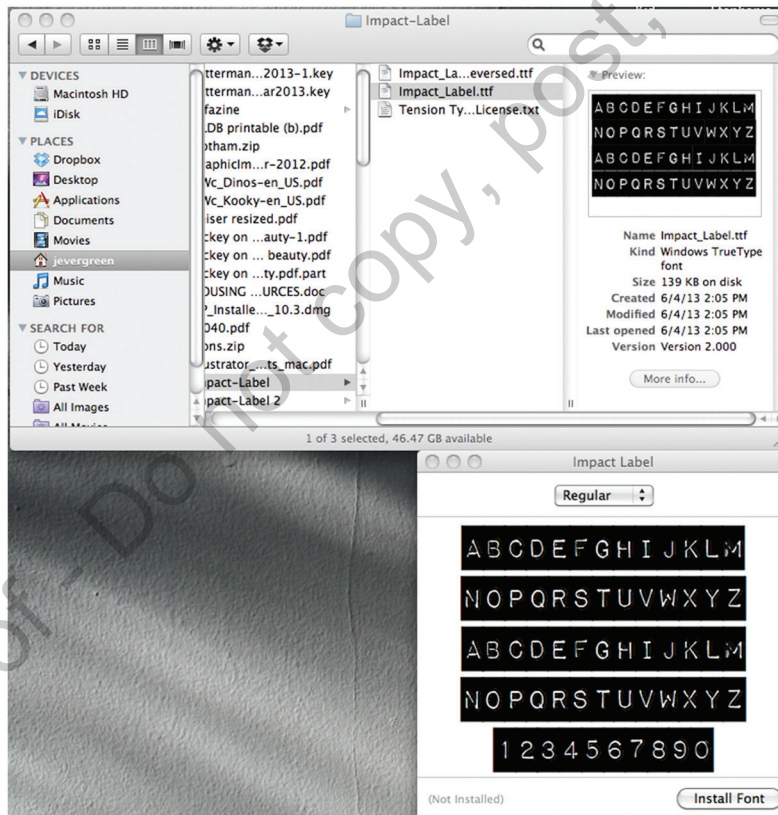
I double-clicked on the font's name in my *Downloads* folder and it opened a second window below. In there, I clicked *Install Font.*

Then my Mac's Font Book popped open, and there was my new font, ready to make my PowerPoint shine:

Figure 3.12   **Check your Font Book or open PowerPoint to see the new font**
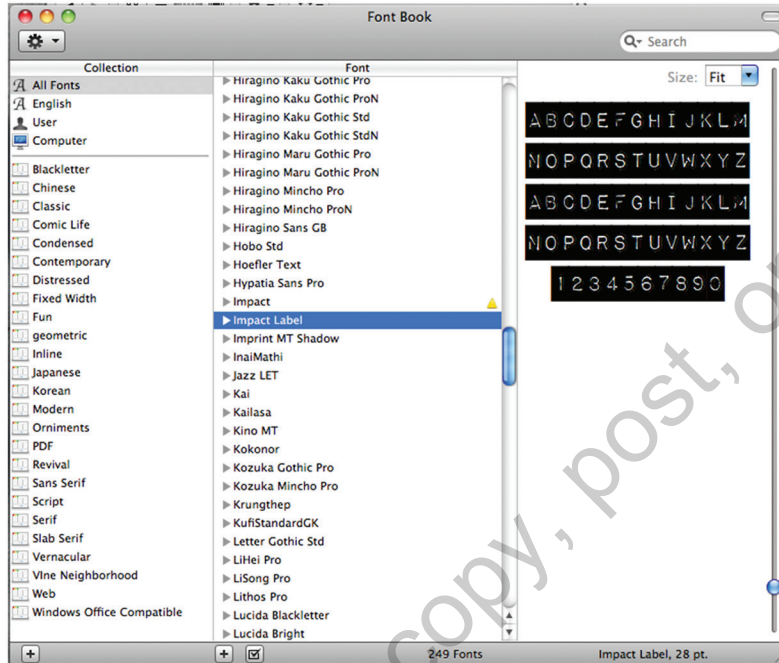
If you work in a place where you aren't allowed to add to your computer's *C* drive, you'll need to snag your IT person to help secure the right permissions. Either way, this process is as simple as downloading and opening an email attachment. So don't be intimidated! You are not restricted to the default fonts loaded onto your computer.

You may have tried using specialty fonts before, only to discover that when you passed your document along to someone (like a client) who didn't have the font, it didn't look right. Let's solve that problem right now.

How Can I Protect Font Choices?

I used all of the procedures I've described above when I designed the report I detailed at the start of this chapter—and still, everything went awry. Let's break down what happened.

I set the report's narrative type in Gentium Book Basic, a typeface installed on my workplace PC. Gentium Book Basic is a decent font, holds up well on-screen, yet it is a serif that can be read at length. Sounds like a superstar, right? But when I shipped the

report out to my boss, he opened it at home on his Macintosh, where that font was not in his Font Book. Oh, the trials and tribulations of PC–Mac compatibility!

His Mac did not recognize my text font (or the one I used on the headings), so it made a substitution, replacing Gentium Book Basic with another font so that my boss could read the document. Oftentimes, computers do not even let their owners know that a font substitution has been made. So when my boss opened the file, he presumed that what he saw was the product of an employee he knew cared a lot about font choices and assumed it was my preference for it to look that way.

It is painful to go to all the trouble of selecting the perfect font only to have it substituted when the report electronically leaves your hands. You might be tempted to think that this is why the PDF format was invented, right? Don't be fooled. PDF does not completely cure your font substitution ills, particularly when working with a PC–Mac translation. Nor does it make document cocreation any easier when you are producing data presentations as part of a team.

In those cases where the whole team is working in a PC environment, here is what I know now about document protection that I did not know then: Embed the fonts.

In Word 2016, you can automatically embed your fonts when you save.

Figure 3.13 **Screenshot of a typical *Save* window—notice the arrow between the word *Tools* and the *Save* button**
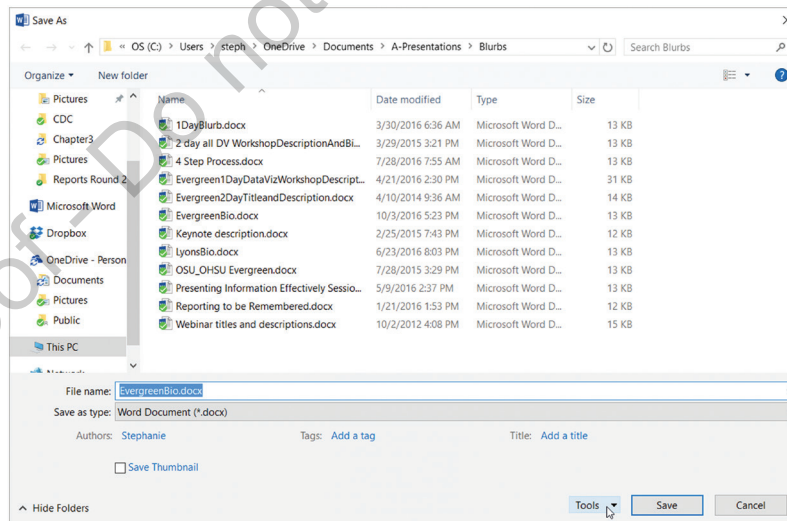
Before hitting that *Save* button, click the dropdown arrow next to *Tools* and choose the *Save Options* link. That opens up a pop-up box that looks like this:

Figure 3.14 **The bottom set of checkboxes shows where you can adjust the settings related to embedding your font**
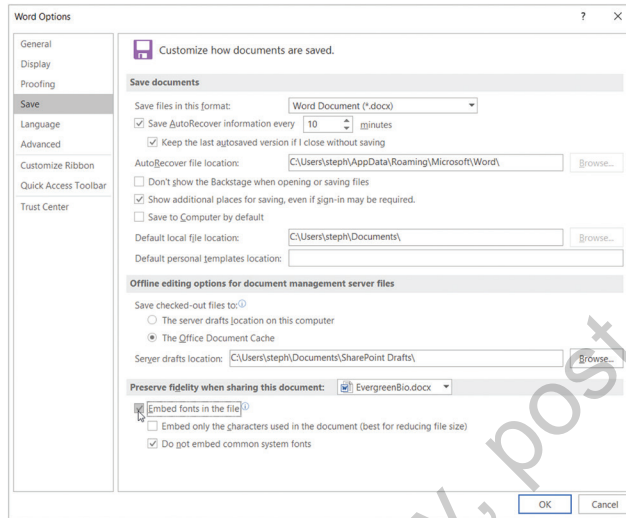
Then, make certain that the checkbox next to *Embed fonts in the file* is activated. Now, the font files travel with the document as it is disseminated. Your readers cannot download the font to their own computers, but they are able to see your materials the way you intended them to be seen. You can also ensure that the fonts are embedded in all new documents by choosing that option from the dropdown menu for *Preserve fidelity when sharing this document* (where, in this screenshot, the EvergreenBio file name appears). However, be careful—in my experience, embedding the fonts can raise file size by about 25%.

You can navigate the same path to embed fonts in any Office 2010 program on PCs. This way, you do not have to worry about your fonts getting substituted as you distribute your work or when you plug your flash drive into another computer.

PC–Mac compatibility is a little trickier, as Macs do not always recognize PC font embedding. In those cases, you can send the font to your colleague and have her download it to her Mac. If the recipient is a client or professor, and it might be awkward to ask her to download and install a font, then stick with fonts common to both computer types, such as Baskerville, Arial (PC)/Helvetica (Mac), or Segoe. As one final possibility, if you want to use uncommon fonts minimally (as discussed next), you can type those words into text boxes, then copy the text boxes and paste them right into the document as picture files. That is a pain, of course, so be selective about the use of nonstandard fonts.

As an extra precaution, you can also embed fonts into PDFs. Within Adobe PDF, look in the *Tools* tab for the *Print Production* area. Open this up and click the option for *Preflight Tools.*

Figure 3.15   To be extra safe, embed your fonts in your PDF too
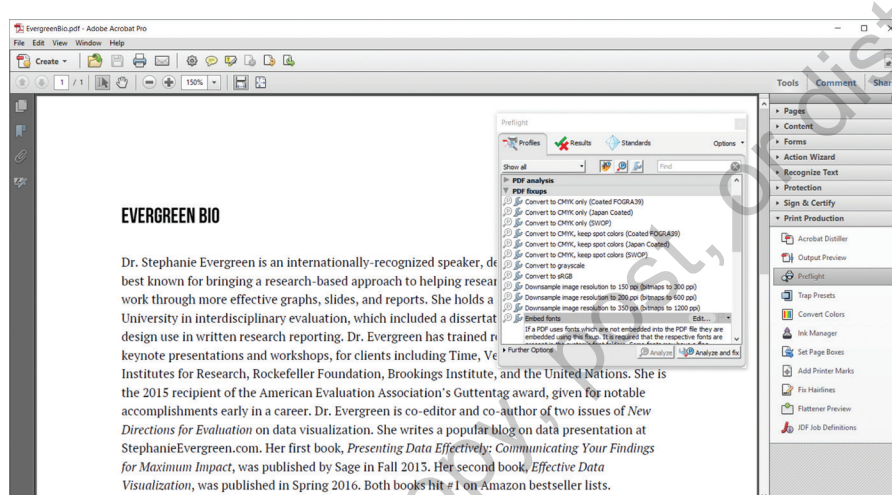
In *Preflight Tools,* open up the *PDF fixups* menu and click *Embed fonts.* It'll run through a check and take care of any font embed issues. From time to time, a font's author will restrict the font from being embedded, but otherwise, this should take care of it, honey.

How Do Fonts Actually Communicate?

Psychologists debate the exact details, but we know that in reading, the eye–brain connection does not work by processing through each individual letter (Pelli, Farell, & Moore, 2003). Rather, curves of letters and the composition of ascenders (think of the tall stick on an *h*) and descenders (think of the stick that hangs down on a *y*) influence recognition of entire words. As such, fonts deserve our thoughtful attention because of their impact on our readers.

Beyond the words they compose, the individual characteristics that differentiate one font from the next also communicate subtle messages to the audience (Lewis & Walker, 1989). Sometimes this is obvious: Fonts that look like handwriting convey that the content is more informal or youthful, without the audience ever reading a single word.

Take, for example, these slides starting off a discussion on student enrollment within a history department.

The title slide in Figure 3.16 is from a PowerPoint template. The default font in the template, Century Gothic, is a sans serif—okay for screen reading, yes, but it can send a mixed message to the audience. The font may be too modern for a history department. Hang in there with me while I explain. Figure 3.17 is the same content in another PowerPoint template, this time set in Garamond, a serif font. Notice how Garamond feels more classic, more appropriate for the fine folks in history? It is more fitting for the subject, but serif is not great for screen reading. What a dilemma.

Figures 3.16 and 3.17   **Two template-based slides, one modern (on the left) with a sans serif font and one more classic (on the right) with a serif font**
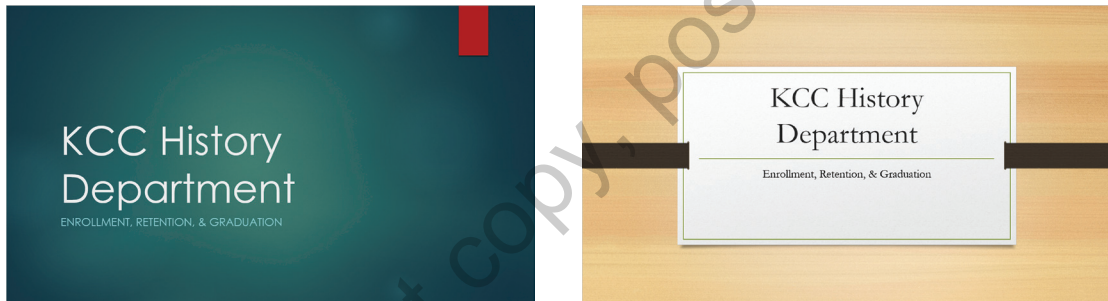
Figure 3.18   **Selected words can be set in a decorative, mood-setting font, while the rest of the text supports readability**

A much friendlier option is to use the power of highly communicative fonts to set off a single word. Highlighting just one word or phrase still influences the flavor of the content and represents the subject well, as long as the surrounding fonts are somewhat neutral. In the revision in Figure 3.18, I used another standard PowerPoint template where the default font is Arial Black, but I offset one word using a more decorative font with an aged look, called Blackadder. Now, we've solved the issues of finding a representative font that communicates the subject and locating a font that reads well on-screen. The trick, however, is to restrict the use of the decorative font. Notice in the next example how the overuse completely obliterates the impact and even the legibility (that title actually says "KCC Enrollment Over Time").

Figure 3.19   Overuse of the decorative font destroys good design and legibility
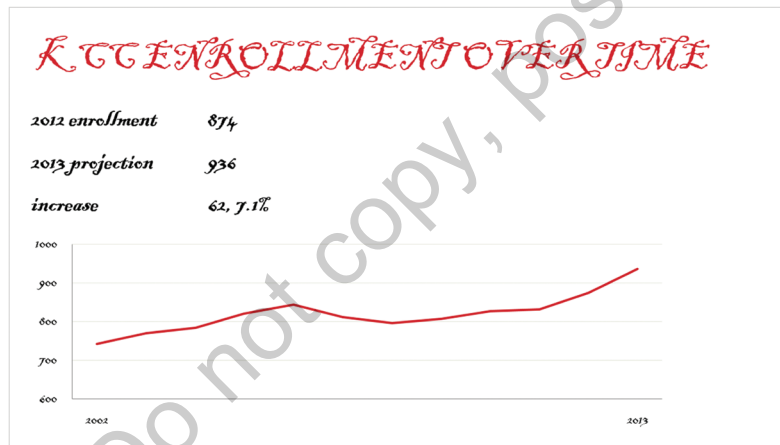
The best way to offset a single word or two is through the use of an extra text box. Definitely, you can keep "KCC History Department" in one text box and just change the font on "History," but that type of change throws off line spacing, especially if you increase the size of the highlighted word, as I did in the example in Figure 3.18. Insert text boxes as needed.

Let's look at one more example.

In these selections, same research, same poster layout, just two very different display fonts. The display font (used on the title, subtitle, and callout) for the poster in Figure 3.20 is Franklin Gothic Demi Condensed. By contrast, the display font used in the poster in Figure 3.21 is called Kids.

Now, we just discussed the need for appropriately matching font personalities to their subject matter, right? By that logic, at first glance it is easy to assume that Kids is the correct font to choose for the research presented on the poster. Yet the Kids

Figure 3.20   Research poster that communicates credibility

Figure 3.21   Same poster, just a different font—one that communicates immaturity

font does a disservice to the research—and, by proxy, the researcher. It communicates a personality of playfulness and immaturity, and it is these characteristics that are interpreted by the onlookers. In addition to impairing legibility, the font makes it difficult for a viewer to read through and digest the entire subtitle; it subtly undermines the credibility of the authors. (Let me say, as a former early childhood specialist and current parent, that kid-print typefaces also do not belong on newsletters, lunch calendars, report cards, or classroom walls. They neither model proper letter formation for children nor adequately represent the professionalism and respectability of the teaching field.) Do you think applying the Kids font on a single word in the title would be effective here? Maybe I have just been overexposed to kid-print fonts, but I would say fonts like these have no place in professional reporting situations.

The more serious display font in Figure 3.20 is not a serif, which traditionally tends to come off as more professional and classic than this sans serif, which is clear and crisp and condensed—everything we want on a research poster. This font is a better reflection of the competence of the research team, and it is this match between the font and the research that is more appropriate. The child-focused aspect of the study is effectively presented through the picture. The font here represents the integrity of the work.

What Font Size Should I Use?

Did you know that you regularly read type set in point size 8, or even smaller? In printed materials, captions and less important information (think: photograph credits, newsletter headline subtext, magazine staff listings) are usually reduced to something between 7.5 and 9 points. We generally read that size type without much issue, such as the need for glasses. The reason we can comfortably read such small type is that the designers have chosen effective fonts that keep their clarity and legibility when shrunk.

Designers don't make the fonts that tiny to give you a headache. They do it to establish a font hierarchy. Our brains interpret the biggest size as the most important and the littlest as the least important. So we can create a hierarchy of font sizes to structure our work and communicate even more clearly. Let's see how this looks in a few examples.

Posters need to have large titles, often as large as 150 points, which is readable from about 25 feet away. In the poster in Figure 3.22, the green title is set in TheSans Extra Bold at 90 points.

Headings on a poster, such as "who are you?" in Figure 3.22, should be set in about 40-point size or larger (this poster uses 45-point type). Text at this size is legible from more than 5 feet. This means conference attendees can read your research poster title from down the aisle and come in closer to examine the details. It's a good idea to pick a sans serif font here, even though posters are on paper, because serif fonts tend to fall apart, with their thinner parts getting so thin that legibility can be diminished.

Figure 3.22   **The different sizes of fonts within this poster help communicate what should be read first, second, and so on**

This poster also has subheadings, like "Reasonably computer literate," which is set at 30 points.

The narrative text in this poster is set at 25 points. And either serif or sans serif would work here because it is pretty small. For the narrative portion of poster text, 18-point size, give or take, is common. At that size, it can be read comfortably from about 2.5 feet.

The tiniest print on this poster is used for the names and email addresses of the authors. These are tucked up right under the title, and should be something under 18 points.

Altogether, the sizes of the fonts sort the poster's various elements into a hierarchy of importance. This same method works in all of our reporting mechanisms, though they don't all have as much content on one page.

Slides will have very little text on them, which means that whatever text is there can be large and in charge. Go for headings set in 80-point type or larger. That can feel scary, but such size is important in a slideshow setting, particularly when you are presenting your research in a cavernous room. This means the folks sitting in the back row of your conference session or your classroom lecture hall will stay more engaged and less annoyed.

You can get a rough idea of whether your slideshow's type size is sufficiently large by using the slide sorter view. In PowerPoint, it looks like this:

Figure 3.23   **The slide sorter view provides a quick way of getting a sense of how your text looks to the audience members in the back row of a medium-size room**
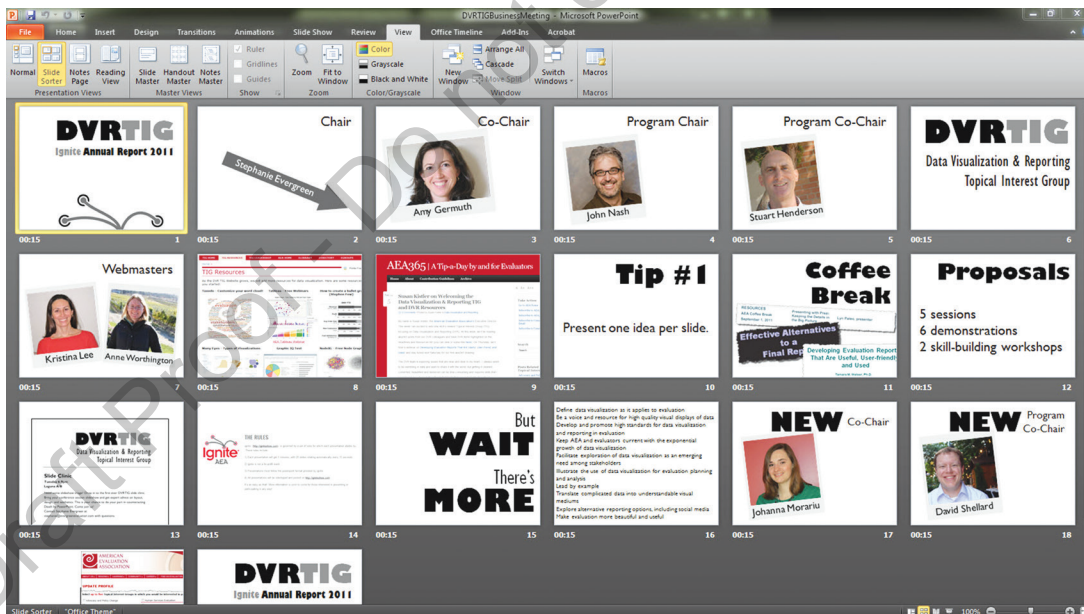
If you can read your words in the slide sorter mode, then chances are good that so can the audience in your presentation room.

To verify your size on a PC, click on the *View* tab and look to the left for *Slide Sorter* in the *Presentation View* group. In case you are wondering, the largest type displayed in the slides in Figure 3.23 is set in 115 point in Gill Sans Ultra Bold. The smaller text is from the same typeface family—Gill Sans MT, but in size 44. Slide 16 has lots of text crammed in at size 28, which may be too small. But, of course, the point of that slide was to create an overwhelming feeling.

If the text is too small, and enlarging it is impossible because there is too much text on the slide, guess what? It means there is too much text on the slide. Break those points apart so that each one has its own slide.

Report pages are more like posters than slides, in that there's a lot of content, but it's in a much more intimate format (who ever thought we'd used "intimate" to describe your report?).

Figure 3.24   Font sizes should vary within a page to mark sections

Source: © 2015. Reprinted with permission from A. J. Drexel Autism Institute.

The report page shown in Figure 3.24 contains seven different font sizes. Generally speaking, headings should be 150% to 200% of the body text size. So, if the narrative text is set in 11 points, the headings should be set in something between 16 and 22 points. In Figure 3.24, the orange report headings are size 12 and bold, set in Arial, which tends to look big.

Guiding Idea

Headings and callouts are emphasized

Important side note, while I have you looking at those orange headings: Check out how each heading is a whole statement. Sheer brilliance! It doesn't say something generic like "Social Participation" or, even worse, "Findings." It says the whole finding. Why does this matter? Because people are skimming your report. You know it, I know it. They are looking for the highlights and the things that jump out at them. They are going to look at the graphs and the headings. So make the headings the takeaway points! And then—total bonus—if you construct a table of contents, it will almost work as your executive summary. Take that one and run with it (for posters too!).

That long narrative prose in Figure 3.24 is about right in size 11. Studies show that 11-point text is easiest to read at length, but, as usual, it depends on the typeface. Some fonts, like Baskerville Old Face, are still too tiny at size 11. You can tell because the holes in the lowercase *e*'s are not yet visible (okay, fine, font nerds, the *bowl* in the lowercase *e!*). Some, like Verdana, look a bit too large at size 11, coming off as immature. If you love Verdana, just set it in 10 point. On the web, a larger font size is typically desired. Standard, reliable choices are Verdana, set in 12 points, and Arial/Helvetica, set in 13 points. Of course, when it comes to the font for your dissertation, you must use whatever is mandated.

Guiding Idea

Long reading is in 9- to 11-point size

Graphs within a page need to fit into the hierarchy as well. The most important part of the graph, usually its title, should be the largest in size to draw a viewer's attention first. Notice again in Figure 3.24 that the graph titles are written like headlines, with key takeaway points. Since these titles fit within the hierarchy of this page, they have to be smaller than the orange headings. Graph titles here are set in Arial size 11, bolded.

A subtitle to a graph would be a point or two smaller than the title. In some cases, graph designers like to exchange a subtitle for an annotation, and they might plunk a callout box right next to a key point in a graph. These annotations should be treated the same as subtitles in terms of the font size hierarchy.

In the case of Figure 3.24, the graphs have no descriptive subtitles, so the data labels at the ends of the bars fill the second position in the importance hierarchy. They are still a larger size than the bar labels, which are larger than the axis labels.

The smallest text of a report is likely to be in the graphs, on source or note information, and it can get as small as size 9. Figure 3.24 uses sans serif fonts within the graphs, but your favorite narrative text serif font might be too tiny to read at 9-point size, and here is why. For the tiniest reading, look for a font that has what graphic designers call a taller x-height (named, cleverly, after the size of the lowercase *x*). For our purposes here, the point is simply the taller the letters, the more legible. Some fonts, such as Verdana, are also wider, which is helpful for those of us who get headaches from squinting too much. But what works at 9-point size does not always work at larger point sizes. Check out your nearest magazine. Chances are that the small-size captions are set in a typeface different from the larger text intended for narrative reading. Which means you might need three different fonts for a well-structured report. In the case of Figure 3.24, there are three fonts in seven different sizes.

Audiences interpret larger size as higher importance. In a hierarchy of information, largest is at the top. Varying type size communicates the organizational structure of the report and provides the reader with clues to the author's logic.

How Should Lines Be Spaced?

Before we get too much further, let's chat for a moment about a closely related issue. Line spacing (i.e., the distance between lines within a paragraph) can affect legibility even when effective fonts are selected.

For lines within a paragraph, generally choose line spacing that is 1 to 2 points larger than the body text.

Guiding Idea

Line spacing is 11 to 13 points

In Word, this can be done in two ways. Clicking on *Line Spacing Options* in the dropdown arrow in the *Paragraph* area of the *Home* tab opens up the box shown in Figure 3.25.

From the highlighted dropdown menu called *Line Spacing,* you can choose *Exactly* and type in something between 11 and 13. Alternatively, you can choose *Multiple* and type in something between 1.1 and 1.2, getting down with lots of decimal places available there.

Figure 3.25　**This window is where you can adjust the spacing between the lines of narrative text**
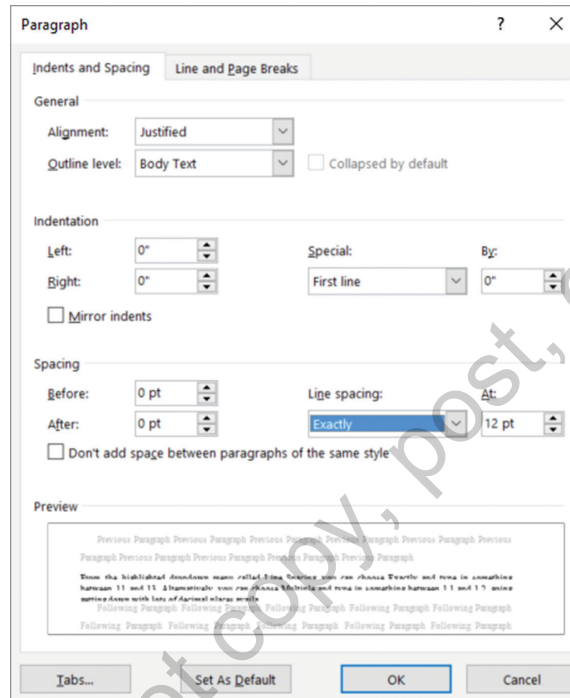
Figure 3.26　**Three line spacing possibilities, each influencing the readability of the text**

11 point text 11 point spacing **Too narrow!**	Generally speaking, ideal reading conditions occur when the line spacing within a paragraph is set 1-2 points larger than the size of the text itself. If you know your type size, you can figure out proper line spacing.
11 point text 13 point spacing **I can breathe!**	Generally speaking, ideal reading conditions occur when the line spacing within a paragraph is set 1-2 points larger than the size of the text itself. If you know your type size, you can figure out proper line spacing.
11 point text 22 point spacing **I'm lost in space!!**	Generally speaking, ideal reading conditions occur when the line spacing within a paragraph is set 1-2 points larger than the size of the text itself. If you know your type size, you can figure out proper line spacing.

When the lines are too close together, the ascenders in one line bump into the descenders from the line above, making it difficult to discern the words and causing general feelings of claustrophobia. Line spacing that is too far apart, as in the last instance in the figure above, breaks up the fluidity of the paragraph.

How Does Typeface Help Organize Data Presentation?

A change in font indicates a change in meaning and invites the audience to spend energy to interpret the meaning. This is why unnecessary font changes—whether in the font itself or in the size—cause audience frustration. So, be intentional about font changes and incorporate them only when you want to signal a shift in the narrative, such as the start of a new section or the title of a chart. Here are five places where a font change is warranted (I'll discuss a few others later on, in the context of data displays): headings, callouts, sidebars, quotes, and bullets.

Guiding Idea

No more than three fonts are used

Headings

Headings are a clue to the report's organization. They can be distinguished from body text by their placement above the narrative, and they can be further distinguished through the use of a font change. When moving between fonts, make them very different. If the sans serif heading looks too similar to the serif body type, it just comes off as a sloppy mistake. Be a little bold with the headings. Contrast with body text by using a different font category, size, style, and/or color. Looks that are too similar seem unintentional.

Subheadings should be set in the same font as the document's headings. In keeping with a hierarchical organization, the subheadings should be downplayed just a bit: smaller in size than the headings, or a more neutral color.

Callouts

Callout boxes are those short bursts of text that highlight key points from the research. They are usually embedded within the narrative text; however, because they are used for emphasis, they must be visibly distinguished from the narrative

text. In terms of content hierarchy, headings are more important than callouts, and callouts are more important than the narrative.

For example, in the research poster we dissected earlier in this chapter (Figure 3.20), the callout box in the lower right is set in 72-point size—the same size as the subtitle, and both are smaller than the main title.

Figure 3.27 **Callout boxes can be distinguished from the narrative text through adjustments in type settings, such as size and font**
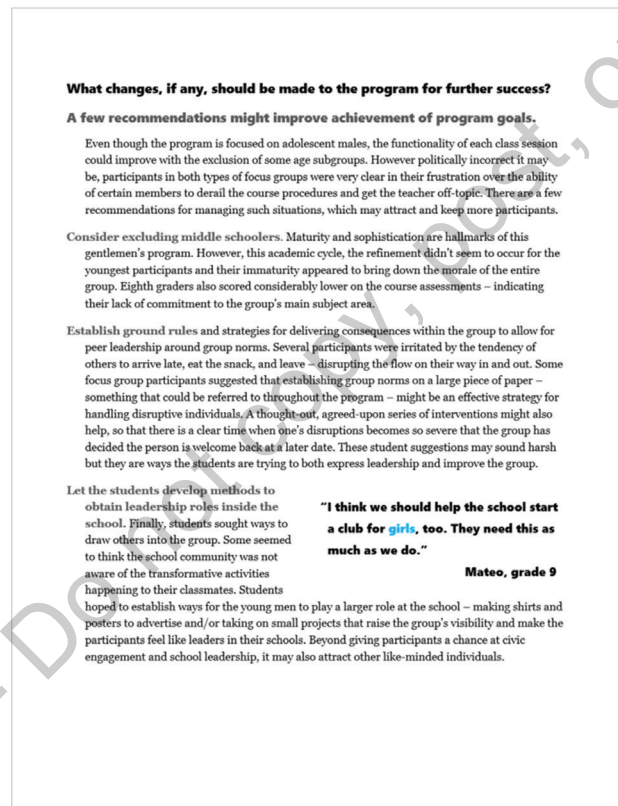
In the report page shown here, the callout box is emphasized by its distinction from the narrative text. First, it is set in the same font as the heading—Segoe Black—so that it is visually different from the narrative, indicating to the reader that there is a change in meaning taking place. Second, the callout box has an ample margin separating it from the narrative text. It is also larger, set at 12 points rather than 11. The APA Guide (2010) recommends that figures and sidebars should be set in a sans serif font, at a size between 8 and 14 points. All of those settings then create a situation where the callout box is lifted out of the narrative to become higher in the hierarchy of importance on the page.

Sidebars

Shifts in the narrative also occur with the introduction of sidebars. Sidebars are a way to showcase short, poignant stories or to describe details that are related but not a direct part of the narrative. The conceptual distinction needs to be physically presented in the report via sidebars.

Figure 3.28   Sidebars are good places to introduce a third font
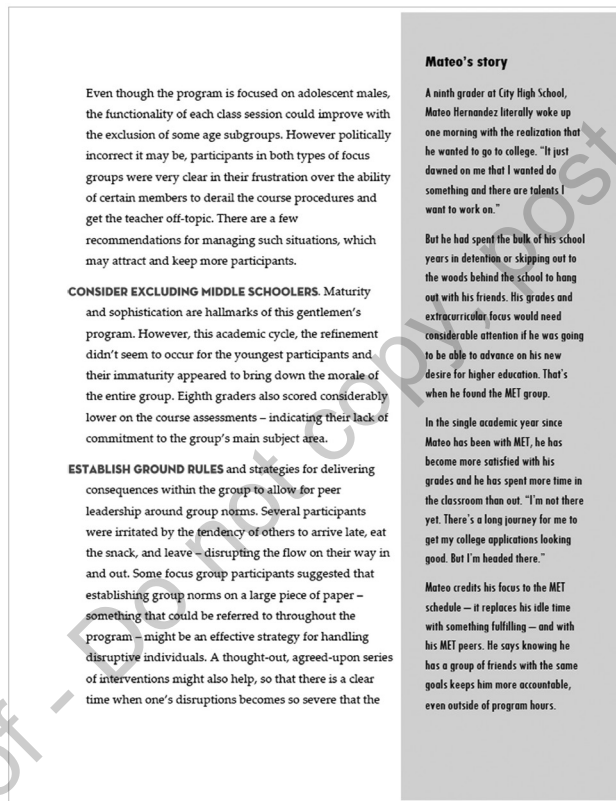
This example shows a sidebar that contains a small success case study. The content can stand on its own and serves as a complement to the narrative, making it suitable material for a sidebar. The sidebar is established with a gray background, and while color is commonly used to demarcate separate space, it is not totally necessary. As discussed in Chapter 4, on color, you need to be careful that the sidebar background color is light enough for good legibility.

What is more compulsory is that the sidebar content is set in a different font, so that it is not confused with the narrative text. In fact, sidebars are frequently set in a third font, not the one used for the text or the one used for the headings of the report.

Often, the third font is a sans serif that complements the other two. Identifying three complementary fonts can be tricky. Some font-matching resources are listed at the end of this chapter, but as a backup plan you can set your sidebars in the same font as your sans serif report headings and get the job done. Be attentive to the line length here—I used a condensed font for the sidebar in Figure 3.28 to get closer to the ideal of 8 to 12 words per line, which is discussed in Chapter 5, on arrangement.

Quotes

Stylistic uniformity means that each narrative text section has normal text in sentence case. No bolded words. No all caps. Nothing underlined. In essence, if you blur your eyes just a bit, the narrative text should look like a gray blob with nothing in particular standing out or emphasized. Stylistic uniformity supports undistracted and speedier reading.

Guiding Idea

Body text has stylistic uniformity

We talk about quantitative data displays at the end of each chapter, but we have not discussed how to display qualitative data very much. There are some cool ways (getting even cooler by the day) to visualize qualitative data, but for now, that is beyond the scope of this book (for more on this, see the entire chapter on qualitative data in *Effective Data Visualization*). The most basic way to show qualitative data is through the quotes of our research participants. *Do not put the quotes in italics.* That's funny. But, I am serious: Do not put the quotes in italics. Italicized text breaks uniformity. We think we are drawing attention and emphasizing text with italics, but they actually make text stand out even less. Italics also work against comprehension because italics are hard to read, especially at length. Quotation marks are sufficient to indicate a quote.

When Should I Break the Uniformity Rule?

Of course, uniformity is the ideal, but there are some situations where there is no choice but to emphasize within the narrative text. For example, grant applications, journals, and dissertations are notoriously strict in their text settings, specifying the font and font size and restricting the use of other features like callout boxes. I even worked on a grant for one foundation where the application had to be cut and pasted into text boxes on a website. In these situations, bolding or all caps might be the only option for those critical pieces of text that must stand out to the reader. Because those emphasis methods can make it hard to read text, be judicious with your use.

I know it probably sounds like certain of my recommendations make data presentation pretty boring. And, given some of the restrictions I've outlined, it might seem like you are destined to make the most uninteresting typeface choices. This is actually what we want for our narrative text. We do not want people distracted by the shapes of our letters; we want them reading our letters to digest our data presentation. When the narrative text conveys information we want retained, it is okay to be boring. We have other methods of emphasizing and highlighting our key messages. Additionally, you save yourself the time and effort of styling the text. Uniformity is a win-win for you and your reader.

Bullets

Personally, I think bullets kill—by that I mean that sometimes they create more problems than they solve. Too often, they are used whenever a sentence contains enough objects that it can become a list. Instead of a sentence with 10 commas, authors make a bulleted list; but bullets can be very powerful.

Notice in this example how the darkness of the bullets is nearly the same as the bold heading text? Default bullets are dark. The black dots contrast with the white background more than the text on the slide, and thus they pop out to the reader. The bullets are surrounded by white space, contribut-

> **Guiding Idea**
>
> Bullets are slightly less thick than text

ing to their emphasis as focal points. Our eyes are drawn to the bullets. That is a lot of power. Unfortunately, many authors tend to use bullets on anything that could be a list instead of reserving them for what really needs the reader's attention.

So, I will tell you how to use bullets, if you promise to wield them wisely. If you must use bullets, decrease their size to slightly less (70–80%) than the narrative font point size.

Figure 3.29   **Bullets are generally too dark and distracting to the eye**

What changes, if any, should be made to the program for further success?

A few recommendations might improve achievement of program goals.

Even though the program is focused on adolescent males, the functionality of each class session could improve with the exclusion of some age subgroups. However politically incorrect it may be, participants in both types of focus groups were very clear in their frustration over the ability of certain members to derail the course procedures and get the teacher off-topic. There are a few recommendations for managing such situations, which may attract and keep more participants.

- **Consider excluding middle schoolers.**
- **Establish ground rules.**
- **Let the students develop methods to obtain leadership roles inside the school.**
- **Adjust the standards.**

While performance standards were agreed upon at the start of the evaluation, some impact areas could have seen higher grades had we adjusted the standards set. For example, the self-esteem outcome is supposed to increase over the baseline by 95%. Such growth is realistically impossible. Given that we now have pre-post data for these outcomes from this year, we should rethink the anticipated growth levels and adjust the standards appropriately. The consequence could be that the evaluation grade masks some of the terrific work that was done.

Figure 3.30   If you must use bullets, lighten them so they are less distracting

What changes, if any, should be made to the program for further success?

A few recommendations might improve achievement of program goals.

Even though the program is focused on adolescent males, the functionality of each class session could improve with the exclusion of some age subgroups. However politically incorrect it may be, participants in both types of focus groups were very clear in their frustration over the ability of certain members to derail the course procedures and get the teacher off-topic. There are a few recommendations for managing such situations, which may attract and keep more participants.

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It might be a subtle difference, but now the bullets are lighter than the heading and do not compete with the rest of the text for attention. Yet they still contrast enough to serve their purpose of pointing out a subset of important information to the reader.

My preference is to delete the bullets altogether. But I can bend on this preference, such as when the graphic designers at SAGE made the cute graphics for the page at the start of each chapter in this book.

A good, strong indentation can cue a reader to a subset of information, possibly as well as, if not better than, those dark dots.

Figure 3.31   Adequate indentation can achieve the same effect as bullets

What changes, if any, should be made to the program for further success?

A few recommendations might improve achievement of program goals.

Even though the program is focused on adolescent males, the functionality of each class session could improve with the exclusion of some age subgroups. However politically incorrect it may be, participants in both types of focus groups were very clear in their frustration over the ability of certain members to derail the course procedures and get the teacher off-topic. There are a few recommendations for managing such situations, which may attract and keep more participants.

   Consider excluding middle schoolers.

   Establish ground rules.

   Let the students develop methods to obtain leadership roles inside the school.

   Adjust the standards.

While performance standards were agreed upon at the start of the evaluation, some impact areas could have seen higher grades had we adjusted the standards set. For example, the self-esteem outcome is supposed to increase over the baseline by 95%. Such growth is realistically impossible. Given that we now have pre-post data for these outcomes from this year, we should rethink the anticipated growth levels and adjust the standards appropriately. The consequence could be that the evaluation grade masks some of the terrific work that was done.

How Do I Apply These Ideas to Graphs?

Most of the time, our concerns about a graph's text are about removing the excess so that the graph is less cluttered. Data visualization is usually intended to replace a lot of text, so the little bits that do remain need to be awesome.

This section deals a lot more with the text itself and less with the font, so let me just clear this part up straightaway: I almost always use condensed fonts in my graphs. I mentioned these earlier when talking about sidebars: Condensed fonts are tall and skinny, usually sans serifs. This means you are more likely to fit a data label into the width of a bar in your bar graph, for example. Look for fonts that include "Narrow," "Condensed," or "Cond" in their names. Apply those condensed fonts to the text discussed in the rest of this chapter.

6- to 12-Word Descriptive Title Is Left Justified in Upper Left Corner

If you do nothing else to improve a weak visualization, you'll still seriously improve its interpretability by giving it an awesome title.

Often, we use weak titles that don't really tell the reader the point of the visualization.

Figure 3.32   Weak titles don't tell us much

Parenting Program Pretest and Posttest Scores

How good do you think you are at handling your own stress?   2.8   4.0
How well do you think you understand how your baby will develop?   4.0   4.6
How good do you think you are at comforting your baby?   4.7   5.0
How do you feel when your baby is crying?   4.0   4.2
How close do you feel to your baby?   4.8   5.0
How good do you think you are at soothing your baby if he or she is crying?   4.4
How good do you think you are at understanding what your baby wants?   4.2

I think this is because we make our graphs in Excel, which pops in the two-word "Chart Title," and so we think we need to replace that with two equally generic words like "Graduation Rates." And this puts our audience in the really crappy position of having to

figure out what we are trying to say about graduation rates, as if they are mind readers. They also must spend a lot of time decoding the visual display of the data to see if our point is discernible, when, chances are, the data could convey many points. And that's cool—data are rich and that's why we show them—but our point is lost with a weak title.

We can use that precious title space to frame our message such that when the visual is cut out of our report and spread all over Twitter, our point remains intact.

Figure 3.33   A strong title frames the story

Average **pretest** & **posttest** scores show the parenting program made the biggest impact on helping participants handle their own stress.
Scale was 0-5, with 5 representing "Excellent."

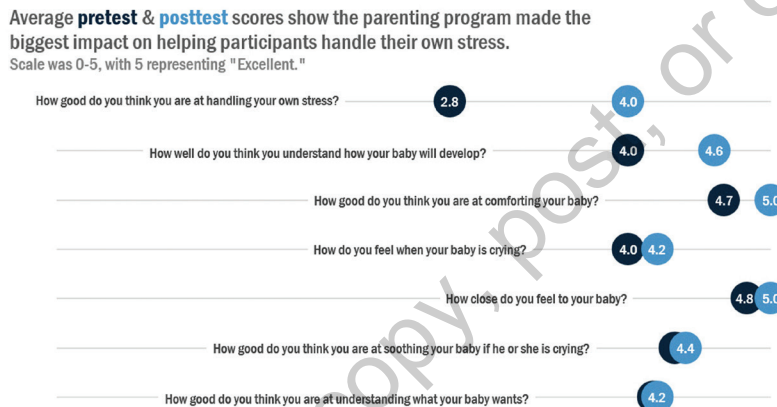| Question	pretest	posttest
How good do you think you are at handling your own stress?	2.8	4.0
How well do you think you understand how your baby will develop?	4.0	4.6
How good do you think you are at comforting your baby?	4.7	5.0
How do you feel when your baby is crying?	4.0	4.2
How close do you feel to your baby?	4.8	5.0
How good do you think you are at soothing your baby if he or she is crying?	4.4	
How good do you think you are at understanding what your baby wants?	4.2	

Coming up with a good title is deceptively tricky because it requires you to know your point—to have figured out what you are trying to say. And that can be half the work of solid data analysis and communication right there. But in the end, it's a very small change to the graph that will take you furthest. That's why a good title is the very first point on the Data Visualization Checklist. It's powerful.

But I sometimes see groups who completely reject the idea of a strong graph title. Usually these are academics or those with a heavy academic upbringing. They tend to think that moving from "Generic" to "Declarative" will somehow bias the audience, as if the audience wants to spend time figuring out your point. There is one audience that doesn't mind muddling through unclear data, and that's other academics. So if you are reporting for a journal article, sure, vague titles might be appropriate. But the rest of the time we are usually reporting to real people who have to make actual decisions and take actions based on our work, and they have paid you to cut to the chase. In other words, using strong titles makes us less annoying.

It doesn't have to be a strong-arm title like "Trump spoke more words at the debate, so he's obviously a blowhard." It can just be "Trump spoke more words at the debate." Which is still way better than "Number of Words Spoken at Debate." There's a middle ground here where the title describes what the visual shows so that the message is conveyed both visually and semantically, without jumping to conclusions beyond the data.

Figure 3.34   Titles don't have to be too heavy-handed
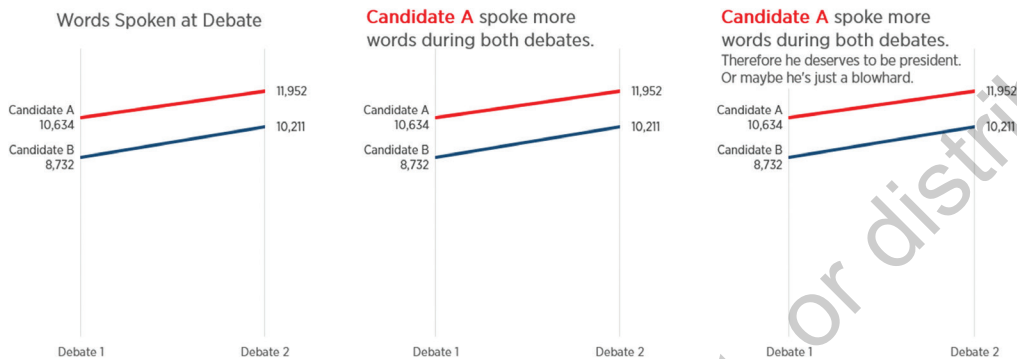
Recent research has also shown that awesome titles are a key element in making a visualization memorable. Borkin and team (2016) used eye-tracking methods to detect that viewers tended to look at the visual first and then at the title. Viewers spent more time on the title particularly when the visual wasn't something unique, like a social network diagram. But regardless of whether the visual itself was unique or standard, when asked to describe the visual later on, viewers were most accurate in describing those visuals that had strong titles. In fact, their descriptions were often very close paraphrases of the titles. Strong titles—the kind that are complete sentences with subject–verb agreement—hang in people's heads.

Shoot for a title that is a whole, complete thought, and put it at the top of the graph, in the upper left corner, left justified. It's a small change with big impacts.

Can Text Sit on an Angle?

When the labels in a graph get long, many software programs will either wrap the text onto multiple lines (centered justification, at that) or tip it onto a 45-degree angle. Both of these options make the text harder to read. When you are in this situation, see it as your clue that you need to change up the graph type. Convert it from a column to a bar graph, for example, so that the labels stay horizontal.

The only time text on an angle is generally acceptable is when the *y*-axis label is rotated 90 degrees. However, as Jon Schwabish points out on his website, PolicyViz, for several reasons, the best place for the *y*-axis label could be under the graph's title, as a subtitle, especially if it is long or isn't otherwise obvious.

Subtitles and/or Annotations Provide Additional Information

Subtitles and annotations are how we can answer the next set of questions viewers are likely to have when they are investigating the data display. Both are opportunities to extend the storytelling just a bit further.

In Figure 3.35, I have included an annotation inside the graph to further explain something happening in the data that the audience would want to know. It's as simple as inserting a text box, but annotations go a long way in explaining the data.

Subtitles are another option to convey just a little more information. Place the subtitle directly under the title, on a new line, slightly smaller, just as I've done in the rightmost graph in Figure 3.34 (though you need not be so heavy-handed). Sometimes I'll use the subtitle space to state important caveats, like the age of the data, or to articulate another aspect to the data story.

Figure 3.35 **Add a little extra text to support the story**

Candidate A spoke more words during both debates.

50% of extra words in Debate 2 were interruptions.

Candidate A 10,634 — 11,952
Candidate B 8,732 — 10,211

Debate 1   Debate 2
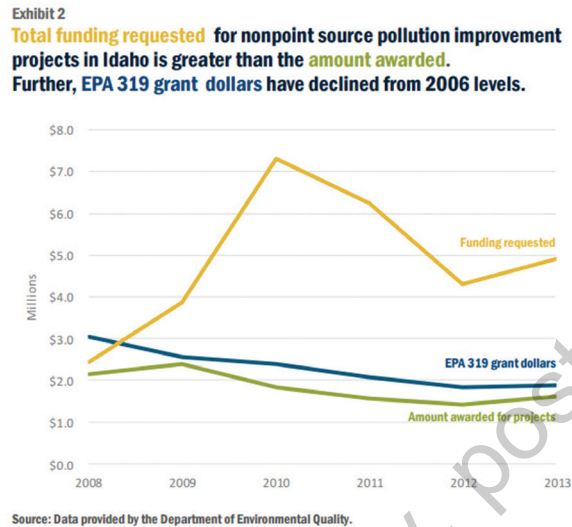
Data Are Labeled Directly

In Chapter 2, we discussed how graphics and the related text need to be placed right next to each other, because flipping back and forth between pages hinders readers' working memory, impairing their ability to make sense of the associated words and images. Truly, the ideal situation for the brain is extremely close placement, and this also applies to the words and images inside data displays. Whenever readers have to seek and find to match up content, cognition is impaired. One way to get closer placement of words and images is to delete the legend. Yep, I just click on it and hit *Delete*.

In Figure 3.36, my client added labels with the identifying words from the legend to the rightmost point of each line, so it is totally obvious which line associates with which legend entry, thus eliminating the need for the legend. Cognition remains supported.

Sometimes it isn't possible to squeeze a lengthy label into a tiny part of a graph. But you can at least reduce confusion by placing the legend across the top of the chart (in the case of bars) so that the colors in the legend are laid out in the same order as the colors in the stacked bars.

In typical default chart production, the labels for the two bars shown in Figure 3.38, "Pretest" and "Posttest," are hanging off to the right, next to tiny squares filled with

Figure 3.36   In lieu of a legend, the lines are directly labeled

Exhibit 2
Total funding requested for nonpoint source pollution improvement
projects in Idaho is greater than the amount awarded.
Further, **EPA 319 grant** dollars have declined from 2006 levels.

Source: Data provided by the Department of Environmental Quality.

Source: © 2014. Reprinted with permission from Idaho State Office of Performance Evaluations.

Figure 3.37   Reposition legends so they align with the order of the bars

To what extent could you do the things I've done today?
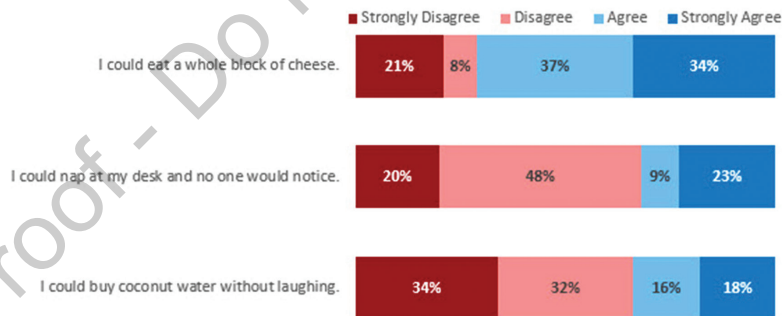
their associated colors. You can delete that legend and insert text boxes right over the bars that include the proper legend labels. In this example, it really only has to be done once, for seventh graders here, to establish the logic of the graph. A reader can immediately interpret the remaining bars without additional labeling or having to go back and forth between the bars and the legend.

Figure 3.38   Directly label the bars on their first appearance

Assessment Scores are Increasing
Eighth and ninth graders made the most progress.
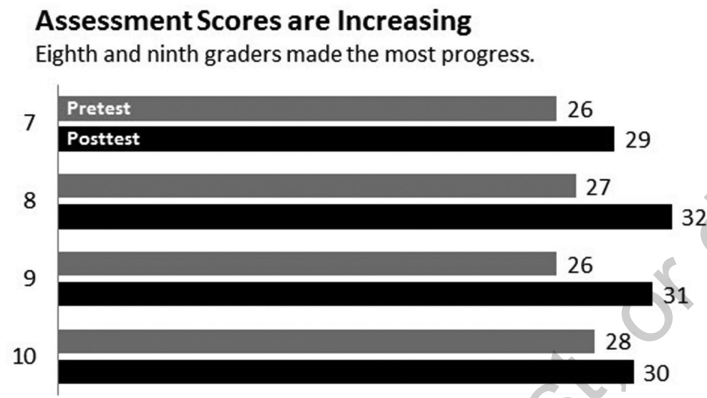
Labels Are Used Sparingly

So far we've been talking about adding text to the graph so it can really stand on its own. This checkpoint, in contrast, is about removing the text that isn't necessary. No doubt, if you start looking for any unnecessary text in your graph, you'll find lot of places where you can hit that *Delete* key again. For example, if your axis is year, you don't need an axis label that says "Year," do you? If the years run from 2000 to 2016, you don't need to label every single one, because doing so clutters up the axis line and, after all, we all know what comes right after 2015.

Another place we often engage in overkill is with numeric labels. Do not add numeric labels *and* use an axis scale, since this is redundant.

Figure 3.39   **No need for both number labels and the *x*-axis scale**

Patients in the South & Northeast had the most daily check-ins during the 80-day program.
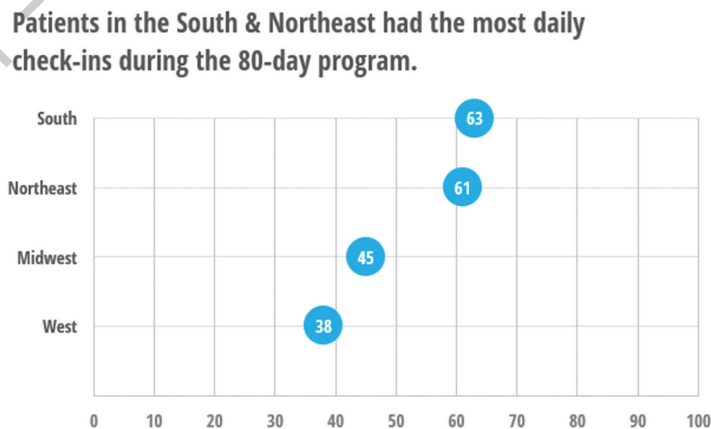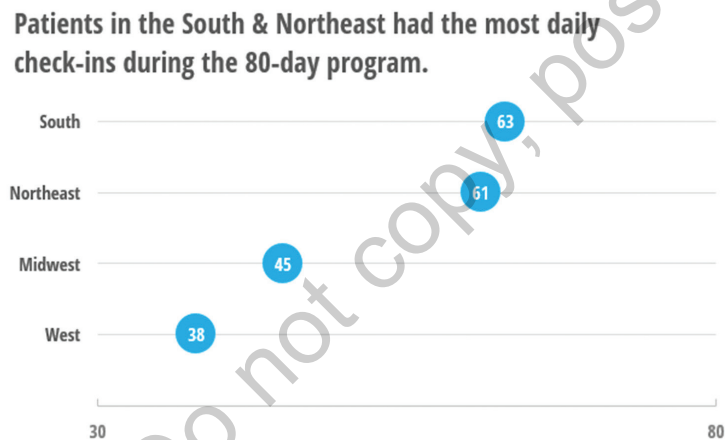
Figure 3.39 is a dot plot, and I have specifically made the dots so large that I can pop their labels right in the centers. If you want to know how many daily check-ins occurred in the South, the giant 63 makes it pretty clear. But I also left in the *x*-axis, marked off at every 10, with all those gridlines. I don't need both.

The general rule is that if the overall pattern is sufficient, use the axis and gridlines. If the precise values are important, use direct labels. *Not both.*

The only time I include both labels and an axis scale is when I have truncated the axis in some way.

Figure 3.40   With a nonstandard *x*-axis, it can be helpful to note the start and end points

Patients in the South & Northeast had the most daily check-ins during the 80-day program.

South	63
Northeast	61
Midwest	45
West	38

30   80

In my dot plot, the program lasted only 80 days, so there's no need to run the scale to 100. And the lowest score is in the 30s, so a start point of 30 makes more sense than a start point of 0 and puts my data more squarely in focus. However, I wouldn't want anyone to be misled by my truncated axis, so I keep the axis in the graph even though I have directly labeled the data. But I certainly don't need every 10 days marked off. In fact, I need only the start and end points. This takes out as much redundancy as possible while keeping in what the viewer needs to make the most sense of the graph.

What Is the Bottom Line?

Choices in font category, size, and spacing affect legibility and influence the mood or environment of the reporting, as well as reflect the competence of the researcher. A hierarchy of importance, established through control and manipulation of the font, communicates to the reader the desired focus and order for attention. Thus, your font choices should be deliberate and consistent. Consistency in your presentations increases legibility and comprehension of the data. Apply your font choices to strong text in your headings and titles, changing a passive graph to one with an active voice that tells a story. Edit ruthlessly to get rid of any text that isn't necessary in your visuals and diagrams.

Key Points to Remember

Typefaces communicate message and intent on their own, regardless of the actual words typed in the typeface.

- Legibility is impacted by the font. Generally, serif fonts are best for long narrative reading on paper. Fonts with an even thickness to their letter shapes—usually sans serifs—are better for on-screen reading.
- Check the details about the fonts installed on your own computer for a better understanding of their intended uses.
- Mood is also influenced by font choices. Serifs are perceived as more traditional and serious. More playful decorative fonts are useful to communicate a more obvious mood, but use them sparingly because they generally hurt legibility.
- Font size also sends a message. Importance is signaled by size so that the most important things are the largest, with the font decreasing in size as the significance of the displayed text decreases. Supportive text like captions can be set in something teeny, like 8 points. By contrast, titles of research posters can be set as large as 150 points, to accommodate reading from a distance.
- If bullets must be used, decrease their size so that they are less distracting.
- Lines of text that are too narrow or too far apart hinder readability, even if you have chosen a beautiful font. For narrative reading, adjust line spacing so it is 1 to 3 points larger than the size of the text.
- Using complete sentences in headlines and titles is one way to massively increase the interpretability of graphs.
- Embed legend labels directly inside the graph to make comprehension even easier.
- Add helpful annotations and take out any redundant text.

How Can I Extend This?

Check Out

What the Font? (**http://www.myfonts.com/WhatTheFont**): Have you ever seen a cool font and wondered what it is? Snap a picture or a screenshot and upload it to What the Font? This website looks for indicators and characteristics of certain fonts and churns out its best guess at the name of the font in question. (The site's main purpose is to then sell that font to the user, but you do not have to take it that far.)

Fontpark (**http://fontpark.net/en**): Graphic designers will not be happy that I am pointing out free font sites—they tend to think you should purchase entire type families from the typeface foundries and that fonts on free sites are a bit junky. Well, there may be some truth to that sentiment, but I still find Fontpark a great place to locate fonts, especially slightly funky ones to make certain words in my titles pop out. Be certain to watch the licensing here, since some fonts are okay for commercial use and some are listed as noncommercial.

Font Squirrel (**https://www.fontsquirrel.com**): All fonts on this site are free for commercial use. If you locate one you like, you can take some sample text for a test drive. But read the license agreement carefully—it may require that you use only PDFs when distributing documents with the font to third parties. Regardless, embed your font! Embed your font!

"'What Font Should I Use?': Five Principles for Choosing and Using Typefaces" (**http://www .smashingmagazine.com/2010/12/14/what-font-should-i-use-five-principles-for-choosing-and-using-typefaces**): This article by Dan Mayer for Smashing Magazine has a lot of great advice, but pay particular attention to Point 4, "A Little Can Go a Long Way," which depicts the practice of using decorative fonts selectively.

The Errol Morris Font Experiment (**http://opinionator.blogs.nytimes.com/2012/08/08/hear-all-ye-people-hearken-o-earth**): In a ruse that was published in his *New York Times* column, Morris randomly displayed some text in six varying fonts and provided evidence that text set in Baskerville was viewed as more trustworthy. See the experimental column and read his debriefing.

Jon Schwabish's blog post on where to place the *y*-axis label (**http://policyviz.com/where-to-position-the-y-axis-label**) provides multiple options and a solid argument on how to make the right choice. Read the post to get the nuance of this decision-making process.

(Continued)

Try This

As in the history department example shown earlier, changing the font for a single word can have a big impact on the look and feel of a page or slide. Open up the report you are currently working on or the last one you finished, identify a keyword or two, and match it with a font that resonates with your subject matter. You may have to paste your emphasis words into their own text box to make this work.

Take a moment now to define your personal style. Pick your own heading and body font. Choose something that represents you well. Save the theme (see Chapter 6) and name it after yourself. Of course, there may be times when you'll need to downplay your personal branding choices in the service of blending in with someone else's branding, such as that of a client, a department, or a funder.

Send font pairs on a date at Type Connection (**http://www.typeconnection.com**). This site lets you test the font-pairing waters through a matchmaking game. If you are a nerd, you will enjoy the step that illustrates why certain fonts pair well together. Most fonts in the game are not native to PCs, but you can always look for the ones you like at the font-finding websites mentioned above.

Where Can I Go for More Information?

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