The Illusion of Life

I really enjoyed reading this part of the book because I never knew there were such concrete studies on drawing and animation principles. I used to draw a lot, and I thought everything fell in place naturally (i.e., if it looked wrong, it was drawn wrong). Many of the topics this chapter focused on are missing from the more strictly mathematical demonstrations and animations that we tend to see in introductory courses. A great example is the physics of a bouncing ball. In the ideal environment with some perfectly elastic ball (one that either bounces forever or not at all), we might see the situation in the first frame of the bouncing ball figure. However, in the real world it usually ends up closer to the second frame. When high-speed cameras are used, we can even clearly see the “squashing” during the period in which the ball makes contact with the surface it’s bouncing off of.

It’s interesting how there’s such a radical difference between using a surprise gag while the audience not expecting anything and using it while they are expecting something else. The former situation may just leave the audience confused where the latter would actually entertain. This ties into follow through/overlapping actions and meeting expectations. If

At first thought, this book chapter may not have much to do with digital visualizations. However, animation makes things more interesting, and using naturally understandable principle serves to make the interfaces intuitive. We can translate much of the knowledge learned from cartoon animation to the visualization process without losing much meaning. For instance, silhouetted items and actions will always be highlighted because they stand out most obviously, and “trailing” or “dangling” behavior on some movable object will signify some sort of flexibility, looseness, or other ability or tendency to change.

Though there could be more to discuss in detail, most of the remaining principles have more subtle but equally important value in drawing visual attention. This book, or even just this reading, could be a great reference for future implementations of moving data visualizations.
**Pad++: A Zoomable Graphical Sketchpad For Exploring Alternate Interface Physics**

We saw Pad++ (more specifically, PadDraw) in a lecture from last semester but I don’t remember it being explained in too much detail besides the standard introduction that it allows virtually unlimited zooming and free scribbling. While this seemed to provide certain benefits, it did lose some organizational capability due to things getting too deep and consequently lost. What saves it from a total disaster is the search functionality. I have never used an interface like it, though, so I can’t say that for certain. The authors point out a bit of reasoning that I had failed to consider before: since our most frequently used content is usually at the top, it should be easily accessible even on this infinitely zoomable interface, and we shouldn’t mind occasionally searching for the deeply buried but seldom-accessed bits of data or programs. From what figure 2 shows, the animation from a base view to the search result entry seems to be sufficient to tell the user where the result belongs. Bookmarks are another way to provide helpful reminders and aids navigation by providing shortcuts as well as an auxiliary organizational tool.

The aesthetics of Pad++ do not appeal to me, but I understand it was 1996, and I’m glad part of the project was directed towards semantics because it is that area which can be greatly augmented by such a bland-looking interface. Pad++ achieves semantic distinction of content with its different representations of zoomed-out regions. To think about it more technically, consider an XML (or SGML if you want to be more general) document, where simply scaled text would not be very meaningful when zoomed out. However, if the tags were collapsed but still present and in a legible size, their meaning and, as a result, semantics, would be preserved. I haven’t looked much into it, but MSML sounds like it would provide better ways to preserve document structure than even today’s commonly used markup languages.