1 Pad++

The paper presents the authors’ framework for implementing experimental user interfaces, called “Pad++.” The overall idea of having information in fixed positions and focusing on detailed information through zooming is a good one, especially with the advent of multitouch interfaces. The web browser on iPhones, for instance, makes use of zooming in a similar way. What really came to mind was the Microsoft Infinite Zoom Touchwall, which almost directly mirrors the idea from the paper and is pretty impressive to see in action.

The HTML view seems like a basically sound idea, and there are browsers which have done similar visualizations of history. I do disagree with the statement that there’s no connection between clicking a link and the current window. At least in the way I use the web, there are two actions I use for any given link: one to replace the current tab, and one to open a new tab. You could call these behaviors “tunneling” and “branching.” Tunneling happens, for instance, when I don’t remember where a page is, but I do remember how I got there, like following map directions. Branching happens whenever one page brings up something interesting I want to focus on later. I don’t think most usage patterns really correspond to “browsing” or “surfing” (whatever that means). For the interface, I’d suggest showing a visual difference between tunneling and branching. Perhaps straight-through history, with no branches, could be shown as a stack of pages, with branches as shown in the paper.

The grid folder view was my least favorite. They have rich visual indicators of a variety of metadata (perhaps too rich, verging on cluttered), and they apply them to the dump hierarchical folder view. They even stick to simple alphanumeric sorting. This seems like a real waste. I understand that a hierarchical view fits with the rubber-sheet metaphor, but the grid view is at odds with what I think are the more powerful lookup methods: relational views and search. Unfortunately, I can’t think of a way that zooming makes sense for a search function, or for any non-hierarchical (or non-linear) view. In any case, having the colorful visualization and not doing any kind of sorting or filtering based on the same metadata is confusing.

The timeline view, while seemingly trivial, could be a very powerful visualization tool, as long as it can be searched, sorted, and filtered. Given this ability, the zoom feature allows an arbitrarily large amount of data to be displayed with ease. The user can see the whole picture, and zoom to a particular portion of the sort/search axis. The vertical component should scale dynamically, and the visualization should make good decisions about which details to summarize at which magnification levels.

The oval view was silly. I’ve never encountered any data that had a “circular narrative structure.”
2 Illusion of Life

The chapter presents a history of the development of modern animation methods at Disney studios. It lists 12 principles of animation which combine to create fluid, communicative, empathic, and pleasing characters. In a broad sense, cartoons and other animation are trying to convey discrete facts to the audience through the motion of shape. Because humans already have an idea of how objects move, this places constraints on what kinds of motion will be convincing or pleasing. In addition, because the animation is dealing with characters, the artists are further constrained by how humans react to facial expression and intentional motion on a lizard-brain level.

The principle of squash and stretch was mentioned quite a bit. I wondered if this technique was useful mainly because of the limited number of frames between poses. Of course real shapes do squash and stretch a little bit, but the examples are highly exaggerated. If the number of frames were increased, or the number of lines, could the exaggeration be relaxed, or is it somehow inherently necessary in animation? I don’t notice the effect being used in modern animation as much as in the examples. Maybe I just missed it.

Anticipation was another important factor, which relates to the idea that people expect certain cues and indicators from characters that move with intention and intelligence. Where a character looks and how they move may have to convey several levels of meaning: what knowledge is available to the audience, what the character itself knows, what the character thinks about that knowledge, etc. Our ability to glean this social information is a highly developed trait and is sensitive to very small physical differences. It’s surprising that animation can capture even a piece of it. We’ve discussed before in class how difficult it is even for video-enabled communication devices to convey this kind of sideband information.

Much of the discussion in the chapter reminds me of the well-known interface design principle: “Do what will surprise the user the least,” also known as the Principle of Least Surprise. The principle of Anticipation is more or less the same thing: give the audience a preview of the action to come so they aren’t confused when it happens. Of course, as pointed out, sometimes you want to surprise the audience, and so you use the same tool to mislead them. What I really take away from this paper in terms of advice for designing visualizations and interfaces boils down to “Clippy and his ilk are doomed from birth” and “anticipate the user’s expectations (to prime them, fulfill them, or abuse them).”