

Critique of *Bumptop* and *Siftables*

BumpTop: <http://bumptop.com/#TEDVideo>

Siftables: http://www.ted.com/talks/david_merrill_demos_siftables_the_smart_blocks.html

I love toys and games, especially board games and particularly the so-called “German” or “designer” board games like *Settlers of Catan* and *The Princes of Florence*, with their high-quality cards, tiles, and assorted playing pieces. Digital versions of these games may preserve the distinctive graphics as well as the rules and mechanics that make these games challenging without being overly complex, but they lack the palpable, ludic pleasure derived from laying out tiles and boards, sorting and shuffling cards, and arranging and moving tiny, colorful (often wooden) pieces. An appropriate analogy might be to consider the difference between playing a classic pinball machine and playing pinball on a computer. Classic pinball engaged the whole body through its receptiveness to forms of input other than the flippers. In thinking about the differences between playing a physical board game and its digital version, it strikes me what an impoverished experience the latter is. The digital version may be a faithful recreation of the game-as-game, even insofar as it supports multiple players and social interaction; but because of its shortcomings in the sensual dimension it fails to recreate the feeling of game-as-experience.

I believe that interacting with computers will become much more natural and enjoyable once interaction becomes more sensual. But in what ways can computer interaction be sensual? Based on my experience with physical and digital board games, I propose that one way is for interaction to become more tactile. Currently our primary means of interacting with computers is via a mouse. Years ago when I was doing a lot of drawing on my computer, I switched to a stylus and graphics tablet because I felt that drawing with a mouse was like drawing with a bar of soap. Even with a stylus, the act of drawing a line with a pencil tool feels much the same as painting a stroke with a watercolor tool. I wonder if it is even possible for a computer input device to convey the difference in texture between, for example, Bristol board and canvas. How then can computing feel or become more tactile?

BumpTop is an interesting approach to making a computer interface that feels more tangible than the ones we’ve been using for the last twenty years. While the input device is still a mouse or pen, BumpTop tries to emulate the visceral feeling of a real desktop by making its icons seem more physical rather than digital and symbolic. Its icons are more like chips or tiles that fall to the surface, bouncing and clattering. Unlike buttered bread which, according to Murphy’s Law and personal experience, always lands butter-side down, BumpTop’s icons always land graphic-side up—which is to say that one gets a sense that its icons have both front and back sides. BumpTop’s icons can bump into each other and knock each other around the surface. Icons can be made bigger to emphasize their importance, and bigger icons act like bigger objects with more heft and force. The motion of interaction is smoother than drag-and-drop, more like a lubricated push-and-pull. Grabbing an icon and flipping it across the desktop seems akin to tossing a playing card across the room and into a hat. Grid snapping is an option, but it seems somehow retro and unnatural.

BumpTop's icons can act like they're made of paper; they can be folded and creased and crumpled up and tossed aside. All that's lacking is a wastebasket with a miniature basketball hoop hanging above it. Icons can be shuffled together and stacked into piles like papers on a desktop, then flipped through or spread out like cards. Instead of icons, the objects can be photos seemingly dumped from a shoebox (all landing face up) and casually sorted through. Enhancing the icons with these qualities imbues them with a patina of nostalgia, as though they are meant to harken back to the pre-digital Age of Paper.

BumpTop uses light, shadow, and perspective to suggest a space above the desktop and a dimensionality that traditional interfaces lack. Icons can act like sticky notes and be pasted to the "walls" around the desktop, casting shadows on the surface below. They can also be stacked on "shelves," which suddenly makes the bibliophile in me imagine my desktop surrounded by digital book icons on shelves. BumpTop occupies a tenuous—and perhaps for some people a transitional—position between the flat world of the traditional desktop and the immersive space of virtual worlds like Second Life. While BumpTop is a fun mashup of a traditional desktop and videogame physics, it falls short of the tactile experience of a physical board game. The user is still employing a traditional input device to manipulate digital objects on a screen, albeit objects that behave more like physical real-world objects than like rigid symbols.

David Merrill's Siftables are a step closer to a tangible interface. Siftables are described as toy blocks that think, which certainly overstates their abilities but nonetheless conveys the idea that they are "smart" enough (i.e. programmable) to react to each other and to communicate with other computing devices. Siftables remind me of BumpTop's icons made physical: they are square and flat and clatter around a real desktop. However, instead of mimicking certain qualities of paper, each Siftable is a tiny computer that responds to certain events in its environment. In that sense, Siftables comprise an ecosystem for manipulating digital information. What they lack in physical flexibility they make up for in programmatic adaptability.

Given their physical similarity to toy blocks, a natural impulse is to lay them side-by-side. In one example of their capabilities, each block displays a letter and the blocks can be placed linearly to form words, which are verified by a nearby computer running a dictionary. It's a small step to imagine the possible word games (e.g. Scrabble, Boggle, crossword puzzles) given enough blocks. Similarly, the blocks can display numbers and mathematical symbols and can compute equations. The blocks can also display images and presumably parts of images, so that they could form jigsaw puzzles and maps.

Because Siftables are physical and responsive objects, interacting with them seems more intuitive than interacting with their digital counterparts. There is no user manual. Instead, users are able to explore the possibilities given blocks with predefined behaviors. In another example of their capabilities, they are literally the "building blocks" for music composition: lead, bass, and drum sounds, reverb and filter effects, and tempo and volume controls that can be combined and sequenced improvisationally. As someone who doesn't play any musical instrument, I'm intrigued by this simple and exploratory method of making music.

Siftables may be tactile, but can they recreate the board game experience? Probably not, but they may be able to create an equally or even more compelling experience. Imagine programming them to interact with Microsoft's Surface, for example, where Surface is the board and Siftables are the game pieces. Suddenly dozens or even hundreds of games are possible with those compatible technologies. Just as BumpTop falls somewhere between the 2-D desktop and the virtual environment, Siftables are hybrid digital-physical interfaces, uniform as icons in shape and size but receptive to tilting and shaking. Perhaps they are a harbinger of interfaces to come, objects that are pleasurable to touch and hold, responsive not only to us but to other objects, aware of their environment and communicative.