Direct Manipulation:
A Step Beyond Programming Languages

Ben Shneiderman
What makes a “truly pleased user?”

Well, if you answer “yes” to at least two of these questions, you’re probably a “truly pleased user”…

Did you find the system easy to master?

Are your tasks being taken care of competently?

Are you retaining your knowledge of the system?

Do you enjoy using the system and showing off in front of your colleagues?

Would you like to get to know the system better?
In 1983, certain programs -- visual editors (EMACS, Vi), video games (Pong, Donkey Kong, TRON), or computer aided design programs (with robots!) -- came close to Ben Shneiderman’s ideal of Direct Manipulation by possessing these lovely and “delightful” qualities:

- visible objects of interest (e.g. multiple lines of code, a Mario Brother, layered --or windowed-- data);
- rapid, reversible, incremental actions (no more tyops!);
- command language superceded by direct manipulation of the visible object of interest;
Why You Might Like Direct Manipulation…

As Don Hatfield’s crew dropped their WYSWYG and Ted Nelson exclaimed: “The tool itself seems to disappear[!]”, Ben Shneiderman was listening.

By positing the Syntactic/Semantic Model, Shneiderman suggests that we, humanity, would be best served by a system that visualizes our problems, gives us physical actions in lieu of a complex syntax, and layers information to make knowledge bi(y?)te-sized and easy to digest.
Some Concerns…

Shneiderman realizes that there might be some issues with direct manipulation. For instance, graphic representation alone doesn’t necessarily guarantee better performance.

Indeed, graphic representation, like a syntactic command language, has aspects that need to be learned. Icons can be confusing or unclear. Misunderstood graphic signifiers could lead to false conclusions and user disappointment. Eek!

Also, 10 graphically signified documents are much less appealing than 50 tabularly listed documents. For sure.
Where do we stand?
Who is ShneiderMan?

In addition to being adorable and awesome, Ben Shneiderman is a Professor in the Department of Computer Science at the University of Maryland, College Park and a pioneer in the field of Human Computer Interaction. His unflagging interest in Direct Manipulation has resulted in many fruitful (cha-ching!) and interesting endeavors visualizing information over the past few decades.