

Lev Manovich, University of California, San Diego, USA

While new media theorists have spend considerable efforts in trying to understand the relationships between digital media and older physical and electronic media, the important sources – the writing and projects by Ivan Sutherland, Douglas Englehardt, Ted Nelson, Alan Kay, and other pioneers working in the 1960s and 1970s – remain largely unexamined. What were their reasons for inventing the concepts and techniques that today make it possible for computers to represent, or “remediate” other media? Why did these people and their colleagues have worked to systematically turn a computer into a machine for media creation and manipulation? This are the questions which I take in part one by focusing on the ideas and work of the key protagonist of “cultural software movement” – Alan Kay.

I suggest that Kay and others aimed to create a particular kind of new media – rather than merely simulating the appearances of old ones. These new media use already existing representational formats as their building blocks, while adding many new previously nonexistent properties. At the same time, as envisioned by Kay, these media are expandable – that is, users themselves should be able to easily add new properties, as well as to invent new media. Accordingly, Kay calls computers the first “metamedium” whose content is “a wide range of already-existing and not-yet-invented media.”

The foundations necessary for the existence of such metamedium were established between 1960s and late 1980s. During this period, most previously available physical and electronic media were systematically simulated in software, and a number of new media were also invented. This development takes us from the very interactive design program – Ivan Sutherland’s Sketchpad (1962) - to the releases of desktop applications that made such software simulations widely available to members of different creative professions and, eventually, media consumers as well – Word (1984), Pagemaker (1985), Illustrator (1987), Photoshop (1989), and others.

So what happens next? Do Kay’s theoretical formulations as articulated in 1977 accurately describe what will take place during next 30 years, or have there been new developments which his concept of “metamedia” did not account for? Today we indeed use variety of previously existing media simulated in software as well as new media, and both are been continuously extended with new properties. Do these processes of invention and amplification take place are random, or do they follow particular paths? In other words, what are the key mechanisms responsible for the extension of computer metamedium’s contents?

In the process of this translation from physical media to software, all individual techniques and tools that were previously unique to different media “met” within the same software environment (as algorithms). This meeting had most fundamental consequences for human cultural evolution media. It disrupted and transformed the whole landscape of media technologies, the creative professions which use them, and the very concept of “media” itself.

To describe how previously separate media work together in a common software-based environment, I coin a new term “deep remixability.” Although “deep remixability” has a connection with “remix” as it is usually understood, it has its own distinct mechanisms. Software production environment allows designers to remix not only the content of different media, but also their fundamental techniques, working methods, and ways of representation and expression. In other words, once they were simulated in a computer, previously non-compatible techniques of different media begin to be combined in endless new ways, leading to new media hybrids, or, to use a biological metaphor, new “media species.” (As just one example among countless others, think, for instance, of popular Google Earth application which combines techniques of traditional mapping, GIS, 3D computer graphics and animation, social software, and so on.) In my view, this ability to combine previously separate media techniques represents a fundamentally new stage in the history of human media, human semiosis, and human communication, enabled by its “softwarization.”