Not only computing — also art

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One of the most encouraging outcomes of the microcomputer revolution is the great number of exciting programs that it is producing. Hardly a day goes by without some new program being created or an old one being updated to increase its facilities or performance.

The effect of this is to put into the hands of imaginative users a new power and creative capability of the sort that was hardly dreamed of before micros, such as the Macintosh, came on the scene. (I will not elaborate on my firm impression that the British contribution to this massive production of well-crafted, useful and successful new works seems disappointingly small.)
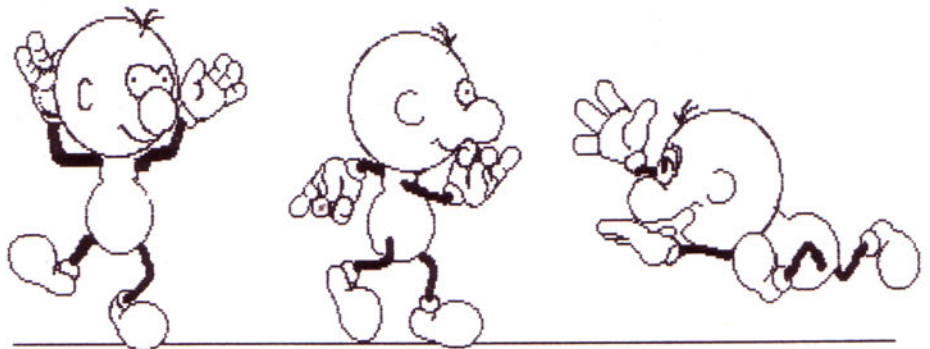
Everyone his own director

One such enormously impressive Macintosh program that I've been using a lot lately is MacroMind *Director*™. This is a development of earlier programs called *VideoWorks*™ and *VideoWorks II*™ — which were pretty good in themselves. *Director* is a vastly improved and expanded version of these, with many more facilities and possibilities. The *Director* package is designed to allow its users to create the sort of animated sequences of images with music, sound and visual transition effects that, only a couple of years ago, would have required a complete animation studio to produce.

In a nutshell, to set up an animated sequence in *Director* requires the same sort of approach as in conventional frame-by-frame animation. Any type of images can be presented in a time-based sequence, although *Director* is especially good for animating 2-D cartoon type characters (Figure 1) and for real-time showing of 3-D models that might take a long time to compute.

Figure 1

As an example of the latter, you might have computed a sequence of pictures of a complex 3-D mathematical figure viewed from various angles. The frame-by-frame output of these computations can be stored in *Director* as members of the animation 'cast', and shown in sequence. If the separate images have been computed as a coherent set, they can be put into a 'film loop' showing, say, the object rotating. If the sequence is not so coherent and consists, perhaps, of random views, these can still be animated by means of the built-in battery of transition effects such as dissolves or wipes. All this can be done to the accompaniment of music, sound effects or even narration.

Director's ability to create a variety of 'in-betweens' is especially valuable for minimising the work in, say, making a cartoon character walk or run across the screen. The package cannot, of course, do true 'in-betweening' in the way that human animators can. But, for instance, if you have a sequence of frames in which a character is walking on the spot, with *Director* it is very simple to make it move from place to place whilst correctly accelerating from rest and decelerating to rest to give the required feeling of realism.

Although the package is self-contained, giving many sound and music examples together with lots of drawn characters and other images for use — as well as a built-in paint system to allow you to modify them or

An old friend revisited

My use of MacroMind *Director* — in particular to help me create animations to amuse my grandchildren and to create convincing movement — has once again sent me back to a book that I bought when I first came to London in 1951, and have consulted with great regularity ever since. As an example of value for money and continuity of use, this book has been the best in my library by far. Costing then less than ten shillings, it is a 40-page folio-sized work by a Disney animator, Preston Blair, and is called simply, *Animation* (Foster Art Service, Laguna Beach, California, 1949). There has been no more valuable book on the subject before or since. It is full of drawings of walks, runs and other essential movements, as well as of large numbers of characters and tips on ways of endowing these with living movement. It is clear that it has influenced the creation of some of the examples in *Director*. I can hardly believe that the book could still be in print, though it certainly deserves to be; if you see a copy anywhere, snap it up. Even if you don't find a use for it immediately, I bet you're bound to want to consult it at some time. (Perhaps when you want to make animations to amuse your grandchildren.)

create new ones, it also exploits the ability of the Macintosh to create images in a variety of forms: hand-drawn, hand-painted, computed or grabbed. These can be easily imported into *Director* from the other programs and used in sequences. If you have a Macintosh, I think this program is a must. (I am afraid I've no idea whether an equivalent package is available for machines other than the Mac.) When you have it, you will soon become adept at presenting information in a time-based and interactive way leading you to reveal both the possibilities of the machine and your own creative potential.

In our use of the program, though, we should bear in mind the words of the great British animator, Norman Maclaren (who did most of his best work for the National Film Board of Canada). He said something like: 'Animation is not drawings that move, but movement that's drawn.' As with most aphorisms, this is partly meaningless and partly full of great insight. Animation is concerned with movement, and it is convincing movement that is the greatest challenge to depict.
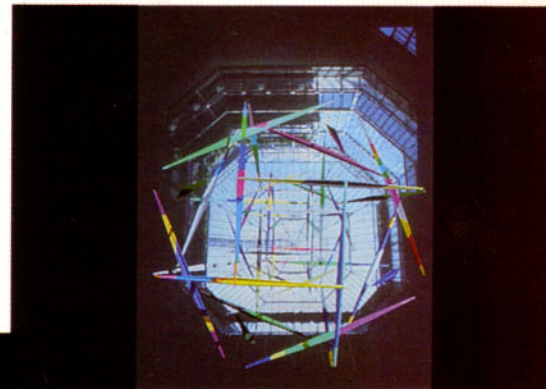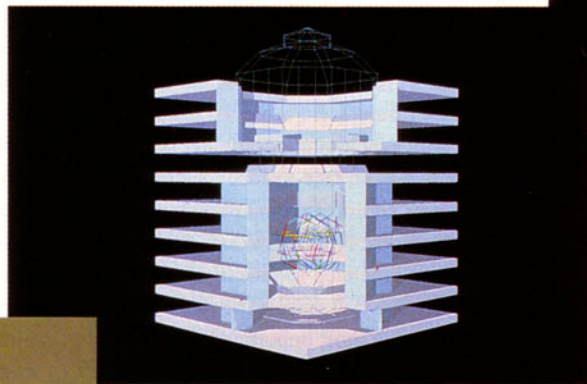

Figure 4

Figure 3

Figure 2

Figure 5

Tensegrity

In February, I went to an exhibition of some new works by Ben Johnson, the artist whose architectural paintings I discussed in these columns a few issues ago. His latest works are two large-scale pieces of sculpture to fit inside buildings in London. One of these is for the new ITV headquarters in Grays Inn Road; the other is illustrated here. It is what is known as a 'tensegrity structure'. The original idea of such structures came from the charismatic American engineer, Buckminster Fuller, who influenced the thinking of at least two generations of artists and architects. The essential feature of a tensegrity structure — which comprises solid members in compression and wires in tension — is that the compression members do not touch one another. They are held apart by the wires. The effect of this is that the compression members seem to float unsupported in the air (see Figure 2).

Ben has used this concept for his monumental structure to hang in a City building by the architects and engineers, Arup Associates. They also did the computer graphics for various views of the sculpture in place inside the atrium of the building (Figures 3, 4 and 5) as well as the calculations for the structural aspects of its components.

Though neither of the two new sculptures could be called works of computer art, they do indicate the increasing role that computers can play as weapons in the artist's armoury. In comparison with the US and continental Europe, Britain is short of large-scale new sculptures and it is exciting to see two such good ones being put in place this year. Those who commissioned these works and all who were involved in their design an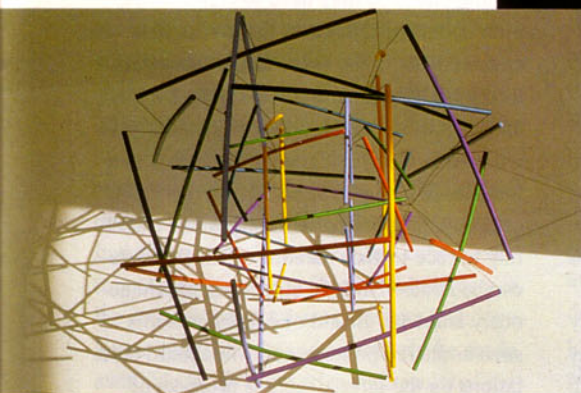d assembly are to be highly congratulated.