ANATOMICAL ANIMATION

I like to feel that there can be great beauty in medical art, a beauty that really goes hand-in-hand with science, as we explore the infinite inner spaces of the human body.

Here we move deeper through the spectacular caverns of the heart and we feel like explorers in this fantastic anatomical world. As the artist, I like to become completely involved in the visual presentation, and my objective is to help the observer become just as involved personally, artistically, scientifically.

Here are some animated examples from a film. Now we have the chance to observe heart function in a large variety of ways.

The value of animation as an art form is that it's a controlled medium. We can show specific action in time and space. And we can have the advantage of being able to expand or condense this time in order to get the information across. There's a great value and a lot of satisfaction in being able to adjust our concept, frame by frame, as one would with brushstrokes on a painting.

Ever since man lived in caves, there were artists, concerned with depicting scientific truths. Now these Lascaux cave painters felt that the success of the hunt depended on their ability to portray their animal prey as realistically as possible.

There are some Australian aborigines that use an x-ray approach. They get involved with the total animal, including the internal organs. Back in medieval times, these were almost as primitive in their concept, but they did represent the technology of the age.

Then came the great Leonardo da Vinci: painter, sculptor, architect, engineer and scientist. His anatomical art was probably his greatest contribution in the scientific field.

This microscopic anatomy was done by the Dutchman Jan Swammerdam, 100 years before the invention of the microscope.

Now the works of Albert Dürer were not scientific in the literal sense, but they reflect tremendous curiosity for exact detail, even to the sore spots of his own body.

Here's the famous Primavera *by Botticelli. What infinite pains the artist took to paint these flowers in perfect botanical accuracy. During the 18th to 19th centuries, the artist-scientists portrayed more accurately than ever the anatomical discoveries of their day.*

Now we're back in our time. The eye, for example, can take on a new look, and today I think we can stimulate the viewer and create more visual excitement than ever.

We can explore the middle ear in terms of its own ethereal space, its intricate forms, its practical sculptural beauty.

Sometimes, information has to be explained in an exaggerated manner because it's too compact to visualize in its normal state. Or, sometimes it has to be portrayed in non-realistic colors, so that we can reveal its inner structure more clearly.

At other times, we have the opportunity to take an artistic journey on film, using the vehicle of artwork and camera mechanics. Here, as we move through the lung structure, we can see its beauty in a normal state. Or we can feel the chaos of it in an abnormal state, by man's abuse of his own lungs to the point of destruction.

What might look like apparent chaos in the area of head and neck anatomy became for me an organized graphic adventure.

As for the variety of realism in the oral cavity and its related structures, this makes its own demands on the artist.

What I found unique about Walt Disney was his genius to convey nature's drama in its many forms. In this case, we were designing for schoolchildren, and the purpose was to create an inner world of wonder, away from the anatomical look, as they watched the development of a human fetus.

In the film called ***Fantastic Voyage****, tens of millions of people were exposed for the first time to the unbelievable wonders of their own body. Within the demands of the story line, the big challenge for us was to make the anatomy as authentic as possible.*

Here's another fantastic voyage, slicing through the human brain using stop-motion photography. In this sales piece, my goal was to make the presentation as beautiful as it is informative. Today in the field of medical communication, I feel very strongly that the concept of informative beauty is a goal worth striving for.

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