(a) Artist's painting.　　　　(b) Computer-generated.

Figure 1: Comparison of a painting by Matt Kaplan and a computer-generated image produced using the approach presented this paper.

Abstract

Rendering convincing human figures is one of the unsolved goals of computer graphics. Previous work has concentrated on modeling the physics of human skin. We have taken a different approach. We are exploring techniques used by artists, specifically artists who paint air-brushed portraits. Our goal is to give the impression of skin, without extraneous physical details such as pores, veins, and blemishes. In this paper, we provide rendering algorithms which are easy to incorporate into existing shaders, making rendering skin for medical illustration, computer animations, and other applications fast and simple. We accomplish this by using algorithms for real time drawing and shading of silhouette curves. We also build upon current non-photorealistic lighting methods using complementary colors to convey 3D shape information. Users select areas from a scanned art work and manipulate these areas to create shading models. The flexibility of this method of generating a shading model allows users to portray individuals with different skin tones or to capture the look and feel of a work of art.

CR Categories: I.3.0 [Computer Graphics]: General; I.3.6 [Computer Graphics]: Methodology and Techniques.