Visual Glue

William B. Thompson   *Peter Shirley*   *Brian Smits*
Computer Science Department
University of Utah

Daniel J. Kersten   *Cindee Madison*
Psychology Department
University of Minnesota

Abstract

One key function of graphics systems is to present information about the 3-D structure of modeled environments. For real-time simulations, conveying a sense of contact between touching surfaces and relative position and motion between proximate objects is particularly critical. Neither stereo nor occlusion cues are completely effective for such fine judgments. Conventional wisdom often argues that shadows play a critical role. Less often, it is argued that interreflection also contributes to the sense that two surfaces are touching. This paper explores the actual utility of shadows and interreflection in signaling contact and suggests how this information can be exploited in real-time rendering systems to glue objects to surfaces.