

Beyond Tradition and Modernity: Digital Shadow Theater

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The first performances of Karagöz (Karagheus), the traditional Turkish Shadow Theatre, date back to the 16th century [1, 3]. It was one of the most popular forms of entertainment until the late 1950s. Legend has it that Karagöz and Hacivat were two masons whose unending conversations were so entertaining that they slowed down the construction of a mosque and eventually the couple got killed by the decree of the Sultan. It was a Sufi leader who invented the shadowplay, Karagöz, to console the Sultan who deeply regretted what he had done. The story reveals another example of how art functions as a substitute for loss.

The mode of representation in Karagöz is in contrast with traditional narrative forms of the West. The western narrative presents itself as real and hence illusory. Karagöz, however, is non-illusory and self-reflexive in the sense that it quite often makes references to its fictitious nature, stressing the fact that what the spectators are viewing is not real but imaginary.

A new computer software has been designed to animate Karagöz characters. It is exemplary not only in the sense that it shows how traditional forms can be adapted to contemporary media, but also in the way that Karagöz can perhaps force the new media to develop new capabilities of artistic expression.

The software, *Karagöz*, uses hierarchical modeling [2] to animate two-dimensional articulated characters containing body parts and joints between these parts. Once the parts are defined, they are aggregated into more complex objects. The different characters of Karagöz have different body parts and joints, and therefore have different hierarchical structures. While drawing the characters during animation, the system applies the required transformations using the model parameters. For example, when a transformation is applied to the hip, the two legs connected to it are also affected; these may have other transformations applied to them as well.

Texture mapping [4] is the technique used for rendering the characters since different body parts are modeled as simple two-dimensional polygon meshes and have a predefined texture that can be mapped to these polygons as the model animates. To animate the models, the system uses keyframing based on the model parameters.

The animation system functions as an authoring tool to create keyframe animations involving these characters. This is done by editing the character parameters such as position and orientation for different keyframes. The animations can then be played back by reading the animation parameters from disk for each keyframe and interpolating between the keyframes (see Fig. 1).

The long-neglected tradition of Karagöz is thus being taken up again in a modern framework. Its artistic features and means of expression are not yet exhausted but are open to further

explorations. We believe that our work is exemplary in that it is an instance of media technologies turning to old forms in their search for new possibilities in art production.

Figure 1. The animation system user interface. The parameters are adjusted by moving the sliders in the animation editor. The effect of modifying the parameters of a character is displayed. The user interface also has elements to write model parameter values for a keyframe to a file, and save/load an animation file in the form of parameter values for the keyframes.

Sample animations of the shadow play characters can be found in http://www.cs.bilkent.edu.tr/~gudukbay/hacivat_karagoz.html.

Acknowledgement

The characters used in the animations are scanned from Hayali Küçükali Shadow Play Collection of the Turkish National Library and from the book *Düinkü Karagöz*, by Uğur Göktaş, Akademi Kitabevi, 1992 (in Turkish).

References and Notes

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