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Karma is the name of the physics simulation module within the Unreal Tournament (UT) game engine. It introduces physical properties like gravity to the game environment. For example, a physics sub-system takes over in the moment of "death," making the "dying" game characters perish in a more realistic manner—sliding down slopes or bouncing off walls, until they exhaust their kinetic energy and stop at a final resting point. Different from procedural key frame animation or motion capture, physics simulation is a dynamic process based on applying qualities associated with physical properties in the real world. This method renders a naturalistic impression, thus comparable to the results of motion capture, which records the motions of living beings as a 3D data set, producing linear samples much as does a classic visual or audio recording. Dynamic simulation, in contrast, is the result of a synthesis based on calculations of a given set of parameters opening a frame of action rather than defining a path or sequence. In real-time computer engines *Karma* results in an organic, life-like animation of potentially infinite variety, albeit within a set framework of rules. Physics is implemented within UT (and other game engines) to make virtual reality more convincing—to make it more closely mimic the reality we are used to.

Studying the physics in UT, one cannot avoid realizing the rather morbid way that the dying protagonists are dramatized, for example by a moment of epileptic convulsions being added shortly before the body is dissolved in a swarm of rapidly decaying particles. Other than the hunting and killing rituals, physics-enriched death ordeals carry within them a strange ambiguity worth exploring. It appears unclear whether the force applied to a game figure comes from within the body, or is an attack from an invisible outside party. It seems as if the 3D characters come truly alive in the very moment of their supposed departure. The feel of a human being in distress or pain instantly replaces the impression of seeing a puppet on a string. Suddenly one identifies more closely with the gaming Alter Ego, potentially feeling empathy, making it that much more difficult to keep an intellectual distance from it.

Karma—the piece for the Cave—starts from a moment of unreal death and from there, "post mortem" so to speak, becomes a rather empty site of the undead, an amusement park in the dark, a behavioral training ground, the characters, frozen in a perpetual moment of loss of control, creating an uncomfortable sense of relatedness to them.

The spectator in the piece can walk around merely studying the unfolding scenes and tableaux, or act by grabbing, pushing, even throwing the characters. At times, one may be suddenly transported to another location, forced to lose control of oneself. The game speed of *Karma* changes throughout the terrain, switching between slower and faster rates. This is in terms of navigating the environment, as well as in the playback of the actual events happening and being perceived by the spectator.
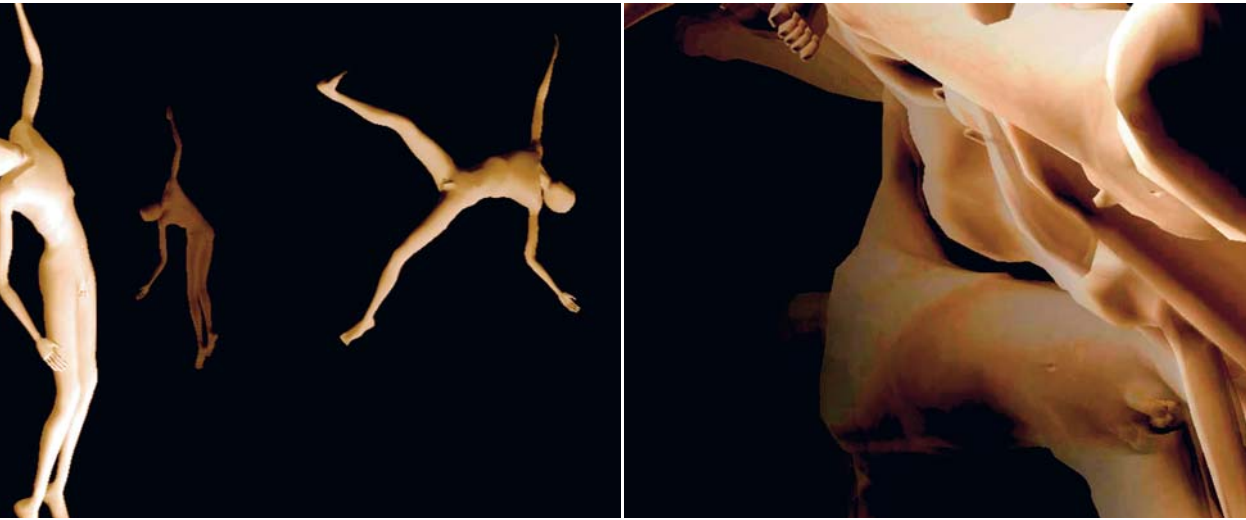
In *Karma,* the motions of characters and of the spectator, as well as the camera and lights, all trigger and synthesize sound and music, composing a dynamic soundtrack on the fly. *Karma* is a nonlinear environment. Visitors individually define the duration of the piece. The suggested quarantine is 15 to 20 minutes.

As a work in progress, *Karma* will continuously expand and morph over time.

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