impression that the Patient has registered the Overseer's presence. Whatever happens next must be a reaction to that presence. Next, the Patient checks the time (Figure 7.25) and the schedule of activities (Figure 7.26) to determine that it is time to exercise. Then the Patient whirls to face the Overseer (Figure 7.27) and frantically and energetically begins exercising (Figures 7.28-7.29), tapering off in enthusiasm as the Overseer departs.

In practice, the timing on the animation is not quite right, so that users do not always interpret each substep of the transition correctly (this problem will be addressed below). Nevertheless, this transition clearly communicates that the change in behavior is connected to several factors: the presence of the Overseer, the clock, and the schedule. This is in contrast with the transition-less sequence, in which there is no clear connection between any of the environmental factors and the Patient's behavioral change.

Headbanging to Dying

Towards the end of the simulation, the Patient is frantically hitting its head against the ground, trying to fix its short circuit in the time-honored manner of the engineer. Because the headbanging movement involves the rapid motion of most parts of the Patient, it is also maximally bad; but the Patient itself is too worried about its lack of sight to worry about how good it is being. At this point the Overseer, who after numerous punishments has had its fill of monitoring the Patient, decides it is no longer efficient to allow the Patient to remain active. The Overseer comes over, maneuvers the Death Ray Machine over the Patient, which sends down a beam, turning the Patient into a lifeless 2-D texture map like the other junk in the junkyard.

At this stage of the game, I would like to communicate to the user that this is not just another temporary turn-off situation. What the Overseer is about to do is far worse than what it has done so far. In addition, this is my last chance to make the user feel guilty for his or her complicity in the scenario. The behavioral change from headbanging to death should make clear the horror of the situation, and be maximally guilt-inducing.

Without transitions, the scene proceeds in the following manner. As we join our character, we find it frantically whacking its head against the ground (Figures 7.30-7.31). As the Overseer approaches, the Patient instantly changes to the deathly fear behavior, which consists mostly of cowering and trembling (Figure 7.32). The Patient continues in this same behavior as the Overseer prepares for, and causes, its death (Figures 7.33-7.36).

Again, this behavioral change, while correct and somewhat effective, does not communicate to the User the full scale of what is going on. There is nothing in the Patient's behavior — who after all has been cowering and fearful for most of the story — that really points out that in this situation, something *really* bad is happening. The user probably does not have any inkling about the implications of the lowering of the Death Ray Machine until after it has done its dirty deed (one user, for example, thought it was merely an x-ray machine). Finally, while the user may feel sad for the Patient, there is nothing to make the user aware of the role he or she unwittingly has played in causing this behavioral change: the Patient's death.

FIGURE 7.30: The Patient is frantically headbanging

FIGURE 7.31: Whack, whack

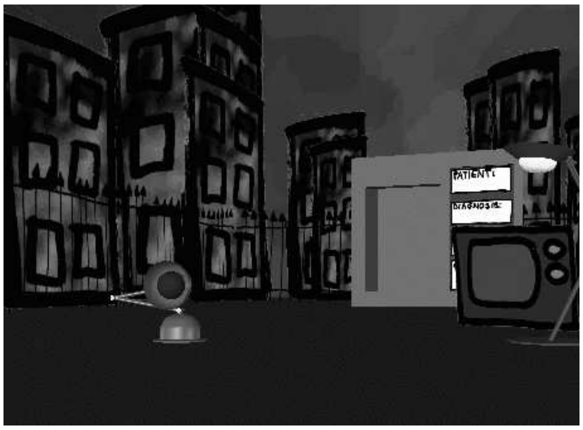

FIGURE 7.32: The Overseer approaches; instantly, the Patient freezes and trembles

FIGURE 7.33: The Patient continues to tremble as the Overseer lowers the death ray machine

FIGURE 7.34: ... and lowers it some more...

FIGURE 7.35: ... and as the Patient is zapped by the Death Ray

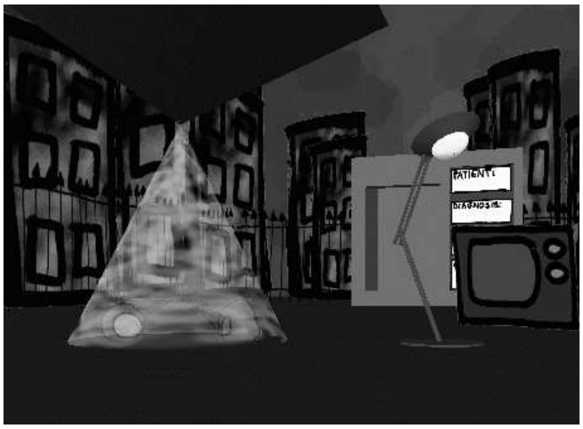

FIGURE 7.36: ... until the Patient finally dies.

FIGURE 7.37: Once again, we join the Patient as it is hitting its head

With transitions, these aspects of the Patient's behavioral change from headbanging to dying is made more clear.[2] Again, we start with the Patient hitting its head (Figures 7.37- 7.38). This time, when the Overseer approaches (Figure 7.39), the Patient crouches (Figure 7.40), and begins whirling around, trying to see where the Overseer is (Figures 7.41-7.43).

When the Death Ray Machine approaches, the Patient turns to face the camera, and therefore by extension the user (Figure 7.44); as the user watches, the Patient's light comes on (Figure 7.45). The Patient then slowly moves its gaze upwards toward the machine (Figure 7.46); when it sees the machine it starts trembling and quickly turns to the user (Figure 7.47). In case the user missed the implications of this move, the Patient repeats the sequence (Figures 7.48-7.49). The Patient's gaze then remains fixed on the user (Figure 7.50) as it continues to tremble until the sad end (Figure 7.51).

Experience with showing this sequence to users suggests that while the transition-less change is understandable, the sequence with transitions elicits both a better understanding of what is going on and a far greater sense of pity. The slow, trembling glances at the machine attract the user's attention to it; the user usually gets a good idea that something very bad

[2] I am extraordinarily grateful to Michael Mateas for helping me design this transition.

FIGURE 7.38: ... not realizing the sinister implications of what is about to happen

FIGURE 7.39: The Overseer approaches

FIGURE 7.40: The Patient crouches...

FIGURE 7.41: and whirls around blindly,...

FIGURE 7.42: trying to figure out where the Overseer is

FIGURE 7.43: (More whirling and trembling)

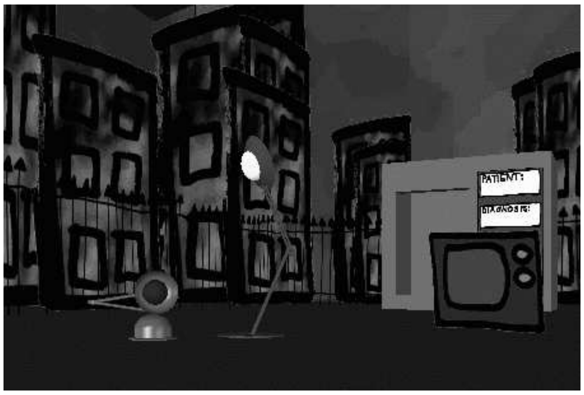

FIGURE 7.44: As the Death Ray machine comes overhead, the Patient turns to the camera.

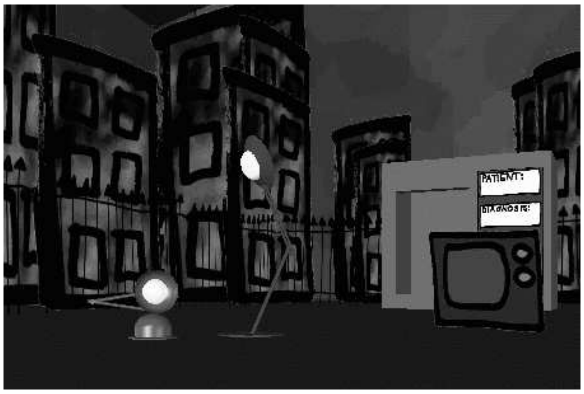

FIGURE 7.45: Its light comes on.

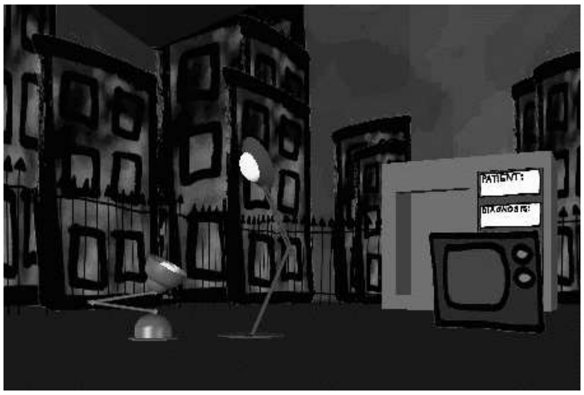

FIGURE 7.46: Slowly, the Patient turns its gaze up to the machine

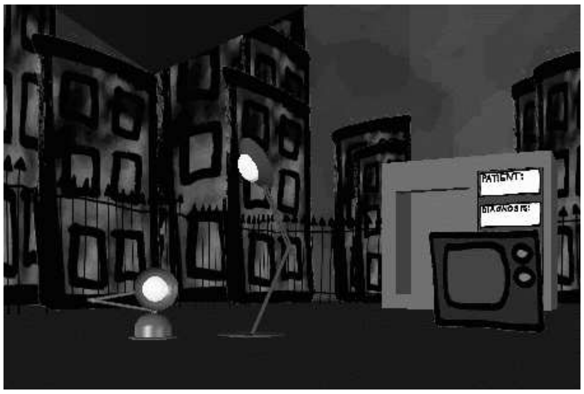

FIGURE 7.47: And looks at the camera, visibly trembling

FIGURE 7.48: Again, the Patient slowly looks up

FIGURE 7.49: And returns its gaze to the user while it trembles