Transcript
11-Neurons

A few introductory words of explanation about this transcript.

This transcript includes the words sent to the narrator for inclusion in the latest version of the associated video. Occasionally, the narrator changes a few words on the fly in order to improve the flow. It is written in a manner that suggests to the narrator where emphasis and pauses might go, so it is not intended to be grammatically correct.

The Scene numbers are left in this transcript although they are not necessarily observable by watching the video.

There will also be occasional passages in blue that are NOT in the video but that might be useful corollary information.

There may be occasional figures that suggest what might be on the screen at that time.

450 Brains
What do we know about the inner workings of the human mind?

Surely everything that humans do from designing skyscrapers to composing symphonies... is not the product of simple cellular interactions. And yet it might be...because everything that humans do (or think or feel) is the result of the basic units of brain structure - the neurons.

The human brain contains more than a hundred billion neurons. Just like a single ant could never build an anthill, a single neuron can't think or feel or remember. A neuron's power is a result of its connections to *other* neurons. Each neuron is connected to as many as a thousand of its neighbors. These trillions of connections provide the playing field upon which the complex activity of the brain takes place. Each neuron can turn its neighbors on or off depending on the signals it sends, and the resulting stable patterns of neuron firing represent memories…and images… and thoughts.

We don't yet understand the relationship between neural activity and mental experience. We don't know what the precise pattern of a *memory* or an *image* or a *thought* looks like. We don't yet know how to read the cerebral "code" of the neurons. But progress is being made. We can now watch exactly how various stimuli and memories cause the firings of hundreds of neurons. Perhaps these techniques will allow us to work our way UP from the activity of a few neurons to see the structure that emerges from the whole.