

# Nervous System and Societal Organizational Principles

## Some Thoughts by Jay Gould

Two or more brains are better than one, as we often say. On a smaller scale, so are two hemispheres within a skull better than one. And at the microscopic level, it is certainly the case that two neurons with a synapse between them are better than one, but not by much. Considerably better are *Homo sapiens*' hundred billion or so neurons with their roughly one hundred trillion synapses firing nerve impulses at maximum sustainable rates (which rarely occurs) of about 500 impulses a second. All of this neural activity involves incredible amounts of feedback communication so that intended outcomes can be checked, as well as a fair amount of feedforward transmission so that neurons needing advance notice of intended outcomes are appropriately prepared. Now that's communication!

Moving back up to the macro-scale of operation, what is interesting is that the hierarchical organization of the nervous system is such that the higher levels, based on analysis and synthesis of inputs from the lower levels, function primarily by removing inhibition from the operation of the lower levels (disinhibition)—rather than by stimulating them to action—thereby allowing the lower levels to do their thing. A clear advantage of this organizational principle is that in the absence of input from the higher levels, the lower levels can still function to a fair degree.

Is there a useful lesson here for the management of organizations? As I explain elsewhere, a nervous system with its billions of interacting neurons is like a society of hierarchically organized groups and individuals that are continuously communicating and influencing one another. Reversing this analogy, I think we could do worse than to model our various social organizations after the operational principles of the very nervous systems that control the individuals who make up the organizations. But now I digress to the subject of fractals—and enough is enough.