WHAT IS SCIENCE?

A Summary by Jay E. Gould

Science can be concisely defined as the *methodical and controlled, rational and empirical, search for truth, i.e., reality*.

WHAT IS THE SCIENTIFIC IDEAL?
(Goals, Requirements, and Methods)

Objective knowledge based on *evidence and reason*,
i.e., empiricism and rationalism, as opposed to just superstition, authority, or intuition (which are other *approaches to knowledge*).

By knowledge we mean *understanding (i.e., description and explanation),* which can lead to *prediction, control, and*
systematization--these are the four *goals* of science.

By evidence we mean *empirical data* (i.e., objective experiences/observations), that are *repeatable and public*
(i.e., capable of being observed more than once and by more than one individual)--these are the three *requirements* of scientific observation.

By reason we mean *rational analyses of data* obtained through *a systematic logic of inquiry* (i.e., steps of the scientific method, manipulation and control of variables, and the use of operational definitions)--these are the *methods* of science.

WHAT IS THE SCIENTIFIC ATTITUDE?
(Fundamental to the Methods)

A questioning, critical, and yet open-minded perspective, stressing *empiricism and rational impartiality* in all of science's activities. This leads to, among other things, *1) new and better approaches* to old problems, *2) the discovery of errors and deficiencies,* and *3) more accurate and complete understanding.*