

**STEVENS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING**

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The Role of Thought Experiments in Sciences

M.G. Narasimhan

National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore, India

Thought experiments in science are experiments performed on the bases of the application of imagination and reasoning. They are conceptual devices used extensively in natural sciences and other disciplines like philosophy. Two important facts are related to the method and aim of thought experiments: firstly, the principal means used in the conduct of a thought experiment is ‘imagination’ and secondly, the main aim of such an experiment is to confirm or disconfirm some hypothesis or theory, especially in the context of a competition with arrival theory. Some of the well-known examples in this regard are: Galileo’s experiments on falling bodies, Einstein’s experiments in the context of special relativity and Sadi Carnot’s experiment in the context of Carnot cycle.

This talk aims at presenting an overview of the concept in terms of an historical perspective, a set of definitions and taxonomy. The talk will also deal with some of the important differences between thought experiments and real experiments, the kind of experiments that are conducted in the “in vivo” conditions of a real laboratory.

Dr. M.G. Narasimhan earned his Master of Arts (M.A) degree in English literature from Bangalore University in 1974. Then he served as a Lecturer in the Department of Education, Government of Karnataka, India. While in service he obtained his doctoral degree (Ph.D) in Science Studies from Indian Institute of Science, Bangalore. Since 1998 he has been working in National Institute of Advanced studies where currently he is a Fellow, in the School of Humanities. His research interests include History and Philosophy of science with special focus on Biology. He has also directed research in History of Physics and History of Science in India. Dr. Narasimhan is the recipient of a Gold Medal for his doctoral research. He has delivered several invited lectures at various institutions including Nehru Planetarium and Bangalore Science Forum in India. He is a member of several research forums. He has several publications in his area of research interests.