

# DEVELOPMENT OF SCIENTIFIC ATTITUDE: A CRYING NEED

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*The advancement in science and technology at individual level as well as for the nation as a whole largely depends on the scientific attitude of the people engaged in the activity of science and also the policy makers of the country. Apart from the advancement in science and technology, adoption of scientific attitude transforms an individual into an rational human being. Hence, in a wider sense, development of scientific attitude is not merely restricted to scientific community only, but as common trait to be present within every citizen of a progressive society. The article presents an introductory idea of scientific attitude and a brief account of a few important traits of scientific attitude that should be inculcated.*

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## Introduction

Scientific attitude is regarded as a complex of ‘values and norms which are held to be binding on the man of science. The norms are expressed in the forms of prescriptions, proscriptions, preferences and permissions. They are legitimized in terms of institutional values’<sup>1</sup>. The norms and values are supposed to be internalized by the individual scientist and, thereafter, they design his/her future course of scientific practice. The set of those common scientific attitudes are generally maintained and accepted by scientists throughout the world.

To have an idea of scientific attitude we need to look into the term *attitude* in general. In psychology, an attitude is a psychological construct, it is a mental and emotional entity that inheres in, or characterizes a person<sup>2</sup>. It is an individual’s predisposed state of mind regarding a value that is precipitated through a responsive expression toward a person, place, thing, or event; which in turn influences almost every thought and action of the individual. It is a ‘readiness’ of psyche to act or react in a certain way. In the journey of life an individual come across various cross sections of society differing in person, place or event. It is *attitude*, which determines how the concerned person will

react or deal with these varied circumstances. Paul G Hewitt in his famous book *Conceptual Physics* mentions that ‘the success of science has more to do with an *attitude* common to scientists than with the particular method. This attitude is one of inquiry, experimentation, and humility before the facts.’

## Historical Background

The current set of scientific attitudes namely objectivity, skepticism, open-mindedness etc. have evolved from a systematic identification of scientific norms and values. Scientists over the ages have internalized these attitudes. Many of them had to sacrifice their lives just because of their uncompromising scientific attitude. Their collective commitment and adherence to these attitudes defined modern day’s science and technology. It was Robert K Merton, one of the first sociologists of science, who described four sets of norms in an essay (1942)<sup>3</sup>. These are universalism, communalism, disinterestedness, and organized skepticism. These are now popularly known as ‘*Mertonian norms*’. The essay was originally published as ‘Science and technology in a democratic order’. It presents the basic principles on which is based the ethos of modern science. It is interesting to note that though ‘*Mertonian norms*’ gained huge popularity, the Merton’s paper was originally concerned with a political problem i.e. autonomy of science. As a sociologist, Merton was interested in

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