# Module 2: Science as Social Institution

## Lecture 12
## Inequalities in Science: Rewards and Recognitions

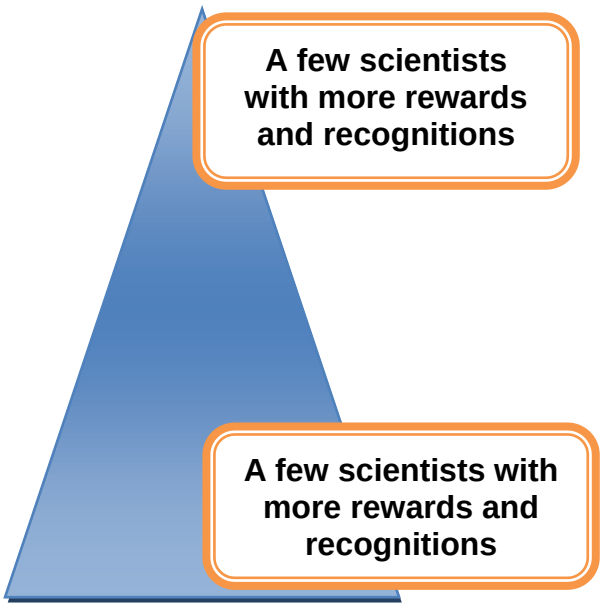
Robert Merton developed a conception of ways in which certain psychosocial processes affect the allocation of rewards to scientists for their contributions.

- An allocation which in turn affects the flow of ideas and findings through the communication networks of science – this is known as the Matthew effect in science

In the sociology of science, "Matthew effect" was a term coined by Merton to describe how, among other things, eminent scientists often get more credit than a comparatively unknown researcher, even if their work is similar;

It also implies that credit is usually given to researchers who are already famous.

- For example, a prize will almost always be awarded to the most senior researcher involved in a project, even if all the work was done by a graduate student.



**Methodology**

The conception is based upon an analysis of the composite of experience reported in Harriet Zuckerman's interviews with Nobel laureates in the United States and upon data drawn from:

- Diaries
- Letters
- Notebooks
- Scientific papers
- Biographies of a variety of scientists

**The Matthew Effect in the Reward System**

The social structure of science provides the context for the inquiry into a complex psychosocial process that affects both the reward and communication systems of science.

The eminent scientists get disproportionately great credit for their contributions to science while relatively unknown scientists tend to get disproportionately little credit for comparable contributions.

The pattern of recognition, skewed in favour of the established scientist, appears principally

- In cases of collaboration
- In cases of independent multiple discoveries made by scientists of distinctly different rank

The problem of achieving a public identity in science may be deepened by the great increase in the number of papers with several authors in which the role of young collaborators becomes obscured by the brilliance that surrounds their illustrious coauthors.

Merton perceives the Matthew effect as a problem in the just allocation of credit for scientific accomplishment:

- Examines it largely in terms of its action in enhancing rank or suppressing recognition.
- Views it as leading to an unintended double injustice, in which unknown scientists are unjustifiably victimized and famous ones, unjustifiably benefited.

***In short, the Matthew effect is seen in terms of a basic inequity in the reward system that affects the careers of individual scientists.***

**The Matthew Effect in the Communication System**

Science as a social system must be seen not only from the standpoint of individual careers and the workings of the reward system but also from the standpoint of science conceived of as a system of communication.

It implies that a scientific contribution will have greater visibility in the community of scientists when it is introduced by a scientist of high rank than when it is introduced by one who has not yet made his mark.

In other words, considered in its implications for the reward system, the Matthew effect is dysfunctional for the careers of individual scientists who are penalized in the early stages of their development, but considered in its implications for the communication system, the Matthew effect, in cases of collaboration and multiple discoveries, may operate to heighten the visibility of new scientific communications.

**Social and Psychological Bases of the Matthew Effect**

Even when some of the contributions have been independently made by an aggregate of other scientists, the great wo/man of science serves distinctive functions:

- It makes a difference, and often a decisive difference, for the advancement of science whether a composite of ideas and findings is heavily concentrated in the work of one man or one research group or is thinly dispersed among a great number of wo/men and organizations.

**When the Matthew effect is transformed into an idol of authority, it *violates* the norm of universalism embodied in the institution of science and curbs the advancement of knowledge.**

**References**

Merton, Robert K. 1968. 'The Matthew Effect in Science: The Reward and Communication Systems of Science are Reconsidered', *Science*, 159 (3810): 56-63.

Merton, Robert K. 1988. 'The Matthew Effect in Science II: Cumulative Advantage and the Symbolism of Intellectual Property', *Isis*, 79 (4): 606-623.