



Serendipity: The Unexpected in Science

Telmo Pievani

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Telmo Pievani's provocative book *Serendipity* integrates literature, philosophy, and science to explore an idea crucial to scientific discovery.

Pievani notes that in the Persian fairy tale "The Three Princes of Serendip," wandering men try to make sense of what they see. Horace Walpole, misinterpreting the tale, coined the word "serendipity" in 1754 to mean "accidental sagacity" or "discovering things you are not in quest of." The term was used in religious studies and medicine before it "broke through the invisible barrier" in the mid-twentieth century to be used in science.

Pievani distinguishes between weak serendipity (discovering what you were looking for through good luck) and strong serendipity (discovering something you really were not looking for). His book makes frequent reference to Robert Merton, who "rightly pointed out" that chance observation is serendipitous only if it deviates from expectations and is "somehow disorienting" as well as useful and relevant. Citing numerous examples, from the profound to the practical, it describes the discoveries of penicillin, X-rays, cornflakes, nonstick coatings, and radio pulsations from interplanetary space. It also details the invention of Velcro after its creator pulled burdock burrs from his clothes and the development of Post-it notes after a researcher applied a failed adhesive to bookmark a hymnal.

Probing philosophical questions are considered: If serendipity is the unexpected bursting onto the scene, what are the roles of planning, preparation, and tenacity? Can serendipitous randomness ever become "too democratic"? That is, can anyone discover wonderful things? Do "errors" in research contribute to unexpected outcomes? Looking ahead, the book argues for a "slower science" that is "free from the pressure to arrive at certain results" due to competition, economic and market interests, or social emergencies.

Serendipity is a comprehensive, penetrating analysis of the role of the unexpected in scientific exploration.

KRISTEN RABE (September / October 2024)

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