

1. Record Nr.	UNINA9910838253403321
Titolo	Chance in Evolution // Grant Ramsey, Charles H. Pence
Pubbl/distr/stampa	Chicago : , : University of Chicago Press, , [2016] ©2016
ISBN	0-226-40191-X
Descrizione fisica	1 online resource (368 pages)
Classificazione	WH 2100
Disciplina	576.801
Soggetti	Evolution (Biology) - Philosophy Chance
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Previously issued in print: 2016.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Frontmatter -- Contents -- Acknowledgments -- Introduction: Chance in Evolution from Darwin to Contemporary Biology -- 1. Contingency, Chance, and Randomness in Ancient, Medieval, and Modern Biology -- 2. Chance and Chances in Darwin's Early Theorizing and in Darwinian Theory Today -- 3. Chance in the Modern Synthesis -- 4. Is it Providential, by Chance? Christian Objections to the Role of Chance in Darwinian Evolution -- 5. Does Darwinian Evolution Mean We Are Here by Chance? -- 6. The Reference Class Problem in Evolutionary Biology: Distinguishing Selection from Drift -- 7. Weak Randomness at the Origin of Biological Variation: The Case of Genetic Mutations -- 8. Parallel Evolution: What Does It (Not) Tell Us and Why Is It (Still) Interesting? -- 9. Contingent Evolution: Not by Chance Alone -- 10. History's Windings in a Flask: Microbial Experiments into Evolutionary Contingency -- 11. Rolling the Dice Twice: Evolving Reconstructed Ancient Proteins in Extant Organisms -- 12. Wonderful Life Revisited: Chance and Contingency in the Ediacaran-Cambrian Radiation -- References -- Contributors -- Index
Sommario/riassunto	Humans, however much we would care to think otherwise, do not represent the fated pinnacle of ape evolution. The diversity of life, from single-celled organisms to multicellular animals and plants, is the result of a long, complex, and highly chancy history. But how profoundly has chance shaped life on earth? And what, precisely, do we

mean by chance? Bringing together biologists, philosophers of science, and historians of science, *Chance in Evolution* is the first book to untangle the far-reaching effects of chance, contingency, and randomness on the evolution of life. The book begins by placing chance in historical context, starting with the ancients and moving through Darwin and his contemporaries, documenting how the understanding of chance changed as Darwin's theory of evolution by natural selection developed into the modern synthesis, and how the acceptance of chance in Darwinian theory affected theological resistance to it. Subsequent chapters detail the role of chance in contemporary evolutionary theory—in particular, in connection with the concepts of genetic drift, mutation, and parallel evolution—as well as recent empirical work in the experimental evolution of microbes and in paleobiology. By engaging in collaboration across biology, history, philosophy, and theology, this book offers a comprehensive and synthetic overview both of the history of chance in evolution and of our current best understanding of the impact of chance on life on earth.

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