

Natural Selection Requires Variation In Order To Operate: What Is The Fundamental Source Of This Variation?

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Natural selection is a cornerstone of evolutionary theory, explaining how species adapt and evolve over time. However, for natural selection to effectively drive these changes, there must be existing variation within populations. Without differences among individuals, natural selection would have no material to act upon, rendering evolutionary change impossible. This raises a fundamental question: where does this variation originate? Understanding the sources of genetic and phenotypic variation is crucial for comprehending the mechanisms behind evolution. This article explores the various origins of variation, with a focus on their biological mechanisms, significance, and implications in evolutionary processes.