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## ABDUCTIVE REASONING IN SCIENCE

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## Abductive Reasoning in Science

Elements in Philosophy of Science

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**Abstract:** In *abductive reasoning*, scientific theories are evaluated on the basis of how well they would explain the available evidence. There are a number of subtly different accounts of this type of reasoning, most of which are inspired by the popular slogan “Inference to the Best Explanation.” However, these accounts disagree about exactly how to spell out the slogan so as to avoid various problems for abductive reasoning. This Element aims, firstly, to give an opinionated overview both of the many accounts of abductive reasoning that have been proposed and the problems that have motivated them; and, secondly, to critically evaluate these accounts in a way that points toward a systematic view of the nature and purpose of abductive reasoning in science. This title is also available as Open Access on Cambridge Core.

**Keywords:** abduction, inference to the best explanation, scientific reasoning, explanatory virtues, alternative explanations

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Contents

Introduction	1
1 A Brief History of Abductive Reasoning	3
2 Contemporary Accounts of Abductive Reasoning	15
3 Why Prefer Explanatory Hypotheses?	31
4 Is Abductive Reasoning Irrational?	46
Conclusion	63
References	66