

1. Record Nr.	UNINA9910132759303321
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Titolo	Non-locality and possible worlds : a counterfactual perspective on quantum entanglement / / Tomasz F. Bigaj
Pubbl/distr/stampa	Frankfurt ; ; New Brunswick, N.J., : Ontos Piscataway, N.J., : North and South America by Transaction Books, Rutgers University, 2006
ISBN	3-11-032330-3
Edizione	[1st ed.]
Descrizione fisica	1 online resource (295 p.)
Collana	Epistemische Studien, schriften zur Erkenntnis- und Wissenschaftstheorie ; ; Bd. 10 / v. 1 0
Classificazione	CC 4200
Disciplina	530.1
Soggetti	Quantum theory Quantum entanglement
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. [283]-290) and index.
Nota di contenuto	Front matter -- Table of Contents -- INTRODUCTION -- Chapter 1. WHY DOES THE QUANTUM WORLD HAVE TO BE NON-LOCAL? -- Chapter 2. POSSIBLE-WORLD SEMANTICS FOR COUNTERFACTUALS -- Chapter 3. A COUNTERFACTUAL VERSION OF BELL'S THEOREM AND ITS CRITICISM -- Chapter 4. THE GHZ AND HARDY THEOREMS COUNTERFACTUALLY STRENGTHENED-WHAT WENT WRONG? -- Chapter 5. TWO INTERPRETATIONS OF SPATIOTEMPORAL COUNTERFACTUALS -- Chapter 6. LOCALITY EXPLAINED AND THE EPRBELL THEOREMS RECONSIDERED -- Chapter 7. COMPARISONS AND CONCLUSIONS -- Bibliography -- Index -- Backmatter
Sommario/riassunto	This book uses the formal semantics of counterfactual conditionals to analyze the problem of non-locality in quantum mechanics. Counterfactual conditionals (subjunctive conditionals) enter the analysis of quantum entangled systems in that they enable us to precisely formulate the locality condition that purports to exclude the existence of causal interactions between spatially separated parts of a system. They also make it possible to speak consistently about alternative measuring settings, and to explicate what is meant by quantum property attributions. The book develops the possible-world semantics of quantum counterfactuals using David Lewis's famous

approach as a starting point but modifying it significantly in order to achieve compatibility with the demands of the special theory of relativity as well as quantum mechanics. There have been several attempts to use counterfactual semantics to strengthen Bell's theorem and its cognates such as the GHZ and Hardy theorems. These are critically evaluated in the book. Finally, a counterfactual reconstruction of the EPR argument and Bell's theorem is proposed that sheds a new light on their philosophical consequences regarding the relations between realism and local causation.
