# CONTENTS

*Foreword* xi
*Preface* xv
*Acknowledgements* xvii
*List of Cases* xxi
*List of Treaties and Other Materials* xxiii
*List of Abbreviations* xxxi

**Introduction** 1

I.1 The Neglected Sleeping Beauty 2
I.2 Why Does the Right to Science Matter? 5
I.3 Research Question and Aim 8
I.4 Book Outline 9

**1 Methodology and Sources** 12

1.1 Methodology 12
1.1.1 Treaty Interpretation under the VCLT and ICESCR 13
1.1.2 The Four Interpretation Methods under the VCLT 14
1.1.3 The Violations Approach 18
1.2 Sources 20

**2 Justiciability of Economic, Social and Cultural Rights** 24

2.1 Tracing the Historical Journey from One Declaration to Two Covenants 25
2.1.1 The Narrative of Competing Ideologies: The East–West Dichotomy Explored 26
2.1.2 Practical Bifurcation: Contrasting Implementation Mechanisms 29
2.1.3 Parallel Progressions: The Trajectories of Separate Covenants 30
2.2 Defining Justiciability at the International Level 31
2.2.1 Justiciability at the National Level 31
2.2.2 Justiciability at the Regional Level 33
2.2.3 Contextualising Justiciability: Unravelling Key Legal Concepts 33



Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 10 Nov 2026 at 05:37:20, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009730181

2.3 Setting the Record Straight on Justiciability 37
2.3.1 Real Rights v. Aspirational Goals 38
2.3.2 Self-Executing v. Non-Self-Executing Rights 38
2.3.3 Non-political v. Political Rights and the Separation of Powers 39
2.3.4 Negative v. Positive State Obligations 40
2.4 The Contemporary Landscape of Justiciability 41
2.4.1 Formal Justiciability: Mechanisms for Adjudication 42
2.4.2 Material Justiciability: The Normative Content of Human Rights Norms 48
2.5 The Road Ahead: Filling the Gap of Justiciability for the Right to Science 50

**3 History and Terminology of the Right to Science 52**
3.1 Charting the Path of the Right to Science 52
3.1.1 The Historical Evolution of the Right to Science 53
3.1.2 From Ratification to Implementation: Legal Documents Post-ICESCR 60
3.1.3 General Comment No. 25: A Catalyst for the Right to Science 65
3.2 Unpacking the Right to Science: Essential Terminology 66
3.2.1 What's in a Name? A Brief Analysis of the Term 'Right to Science' 66
3.2.2 The Human Rights Understanding of Science 68
3.3 Conclusion 108

**4 Interconnectedness of the Right to Science with Other Human Rights 111**
4.1 The Inseparable Trio: Exploring the Human Rights Principles of Indivisibility, Interdependence and Interrelatedness 112
4.1.1 Indivisibility 114
4.1.2 Interdependence 115
4.1.3 Interrelatedness 115
4.1.4 Balancing the Scales of Interconnected Human Rights 116
4.2 Unpacking Overlapping Interests 117
4.2.1 Right to Take Part in Cultural Life (Art. 15(1)(a) ICESCR) 117
4.2.2 Right to Health (Art. 12 ICESCR) 131
4.2.3 The Right to an Adequate Standard of Living (Art. 11 ICESCR) 137
4.2.4 Right to Education (Art. 13 ICESCR) 145
4.2.5 Prohibition of Torture or Other Cruel, Inhuman or Degrading Treatment or Punishment (Art. 7 ICCPR) 147
4.2.6 Freedom of Thought, Conscience and Religion (Art. 18 ICCPR) 150

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 10 Nov 2026 at 05:37:20, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009730181

4.2.7 Freedom of Opinion and Expression (Art. 19 ICCPR) 152
4.2.8 The Right to Take Part in Public Affairs and Elections (Art. 25 ICCPR) 156
4.2.9 The Right to Development and Sustainable Development Goals 157
4.2.10 The Right to a Healthy Environment 160
4.2.11 Other Human Rights 161
4.3 Conclusion 162

**5 Substantive Scope and Core Content of the Right to Science 163**
5.1 The Substantive Scope of the Right to Science 164
5.1.1 The Material Aspect of Substantive Scope: Humanising Science and Technology 164
5.1.2 The Formal Aspect of the Substantive Scope: Freedoms and Entitlements? 165
5.1.3 The Formal Aspect of the Substantive Scope: Unveiling Art. 15 (2) and (4) ICESCR as Substantive Human Rights 166
5.2 The Core Content of the Right to Science 167
5.2.1 The Core Content in International Human Rights Law 167
5.2.2 Upholding the Essence: Human Dignity as the Foundation of the Core Content 179
5.2.3 Interim Conclusion and Next Steps 181
5.3 Core Obligations 182
5.4 Core Rights 184
5.4.1 The Right to Enjoy the Benefits of Scientific Progress and Its Applications (Art. 15(1)(b) ICESCR) 185
5.4.2 The Right to the Conservation, Development and Diffusion of Science (Art. 15(2) ICESCR) 201
5.4.3 Freedom of Science (Art. 15(3) ICESCR) 203
5.4.4 The Right to International Scientific Collaboration (Art. 15(4) ICESCR) 220
5.4.5 The Right to Equality and Non-Discrimination in Science 221
5.5 Conclusion 229

**6 Personal Scope of the Right to Science 231**
6.1 Private Persons 232
6.1.1 Individual Rights Holders 234
6.1.2 Community Rights Holders 240
6.2 Legal Persons 243
6.3 Future Generations 245
6.4 Conclusion 249

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 10 Nov 2026 at 05:37:20, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009730181

**7 Duty Bearers of the Right to Science 251**
7.1 The Science Ecosystem 252
7.2 The State 254
7.2.1 Agents of the State 255
7.2.2 Universities, Research Institutions and Funding Agencies 256
7.3 International Organisations 257
7.3.1 Legal Responsibility of International Organisations under International Law 258
7.3.2 Human Rights Obligations of International Organisations 260
7.3.3 The Role of International Organisations in the Realisation of the Right to Science (WIPO and the WTO) 260
7.3.4 Intellectual Property Law and the Right to Science: A Tense Relationship 261
7.4 Non-State Actors 263
7.4.1 Defining Non-State Actors 264
7.4.2 Direct or Indirect Horizontal Effects of Human Rights Law 265
7.4.3 Responsibilities of Non-State Actors 265
7.4.4 Non-State Actors under the Right to Science 267
7.5 Conclusion 274

**8 Limitations on the Right to Science 277**
8.1 Limitations under the ICESCR 278
8.2 Requirements for Limitations under Art. 4 ICESCR 279
8.2.1 Determined by Law 280
8.2.2 Compatible with the Nature of These Rights 281
8.2.3 Promoting General Welfare 282
8.2.4 In a Democratic Society 282
8.3 Distinctions from Limitations in the ICESCR 285
8.3.1 Clarifying the Concepts of Limitations and Progressive Realisation 286
8.3.2 Limitations under the ICCPR 287
8.3.3 Old Wine in New Bottles? Scientific Self-Regulation as a Matter of Human Rights Limitations 288
8.4 Conclusion 291

**9 Conclusion and Outlook 292**
9.1 The Right to Science: A Justiciable Human Right 292
9.2 Operationalising the Right to Science: Five Steps Forward 301

*Bibliography* 304
*Index* 327

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 10 Nov 2026 at 05:37:20, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009730181