WE, THE ROBOTS?

Regulating Artificial Intelligence and the Limits of the Law

SIMON CHESTERMAN

National University of Singapore



CAMBRIDGEUNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

103 Penang Road, #05-06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781316517680
DOI: 10.1017/9781009047081

© Simon Chesterman 2021

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2021

A catalogue record for this publication is available from the British Library.

Library of Congress Cataloging-in-Publication Data Names: Chesterman, Simon, author.

Title: We, the robots? : regulating artificial intelligence and the limits of the law / Simon Chesterman, National University of Singapore.

Description: Cambridge, United Kingdom; New York, NY, USA: Cambridge University Press, 2021. | Includes bibliographical references and index.

Identifiers: LCCN 2021010083 (print) | LCCN 2021010084 (ebook) | ISBN 9781316517680 (hardcover) | ISBN 9781009048316 (paperback) | ISBN 9781009047081 (ebook)

Subjects: LCSH: Artificial intelligence – Law and legislation.

Classification: LCC K564.C6 C44 2021 (print) | LCC K564.C6 (ebook) | DDC 343.09/99-dc23

LC record available at https://lccn.loc.gov/2021010083 LC ebook record available at https://lccn.loc.gov/2021010084

ISBN 978-1-316-51768-0 Hardback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

CONTENTS

	Preface xv	
	Acknowledgements xvii	
	List of Abbreviations xix	
	Introduction 1	
	Outline of the Book 6	
	Precaution vs Innovation 10	
	PART I Challenges 13	
1	Speed 15	
	1.1 The Globalization of Information 18	
	1.2 High-Frequency Trading 21	
	1.3 Competition Law 25	
	1.4 The Problem with Speed 28	
2	Autonomy 31	
	2.1 Driverless Cars and the Management of Risk 33	
	2.1.1 Civil Liability 36	
	2.1.2 Criminal Law 38	
	2.1.3 Ethics 41	
	2.2 Killer Robots and the Morality of	
	Outsourcing 44	
	2.2.1 International Humanitarian Law 46	
	2.2.2 Human-out-of-the-Loop? 48	
	2.2.3 Lessons from Mercenaries 51	

X CONTENTS

	 2.3 Algorithmic Decision-Making and Legitimacy 53 2.3.1 Contracts and Knowledge 55 2.3.2 Automated Processing 57
	2.4 The Problem with Autonomy 60
3	Opacity 63
	3.1 Inferior Decisions 67
	 3.2 Impermissible Decisions 3.2.1 How Bias Is Learned 3.2.2 Unlearning Bias 74
	3.3 Illegitimate Decisions 75 3.3.1 Public Decisions 76 3.3.2 Courts 79
	3.4 The Problem with Opacity 81
	PART II Tools 83
4	Responsibility 85
	4.1 Managing Risk 87
	4.1.1 Negligence 884.1.2 Strict Liability 914.1.3 Product Liability 934.1.4 Insurance 97
	 4.2 Non-delegable Duties 101 4.2.1 Non-delegable Duties in the Common Law 101 4.2.2 Command Responsibility 103 4.2.3 The Buck Stops Here 109
	4.3 Inherently Governmental Functions and the Limits of Outsourcing 109
	4.4 The Limits of Responsibility 112
5	Personality 114
	5.1 A Body to Kick? 1165.1.1 Theories of Juridical Personality 117

CONTENTS Xi

		5.1.2 The Content of Legal Personality 119 (a) Private Law 120 (b) Criminal Law 123
		5.1.3 No Soul to Be Damned 125
	5.2	Cogito, Ergo Sum? 126 5.2.1 The Extension of Natural Personality 128 5.2.2 Rewarding Creativity 131 5.2.3 Protecting Inventors 135
	5.3	Constraining Superintelligence 138
	5.4	The Limits of Personality 141
6	Tra	nsparency 144
	6.1	In Theory 146 6.1.1 What? 147 6.1.2 When? 148 6.1.3 To Whom? 149 6.1.4 At What Cost? 150
	6.2	In Practice 151 6.2.1 Methods 151 6.2.2 Tools 154 (a) Algorithmic Impact Assessments 154 (b) Algorithmic Audits 156 (c) AI Ombudsperson 157
	6.3	In Law 158 6.3.1 An EU Right to Explanation? 158 6.3.2 Council of Europe Convention 108 162 6.3.3 France 162 6.3.4 United States 163 6.3.5 Canada 164 6.3.6 Other Jurisdictions 165
	6.4	The Limits of Transparency 166
	PAF	RT III Possibilities 171
7	Nev	w Rules 173
	7.1	Why (Not) Regulate? 177

xii CONTENTS 7.2 When to Regulate 180 7.2.1 The Precautionary Principle 182 7.2.2 Masterly Inactivity 184 7.3 How to Regulate 185 7.3.1 Managed Risks 187 7.3.2 Red Lines 188 190 7.3.3 Process Legitimacy 7.4 The Prospects for Rules 192 8 New Institutions 195 8.1 Industry Standards 198 8.1.1 Common Language, Best Practice 200 8.1.2 Perverse Incentives, Regulatory Capture 202 8.2 Global Red Lines 203 8.2.1 Structural Challenges 204 (a) Norms 205 (b) Attribution 207 (c) Consequences 208

8.2.2 An International Artificial Intelligence Agency?

213

216

217

220

227

222

230

212

218

224

218

219

(a) Bargain

(b) Authority

(c) Structure

8.3.4 An AI Ombudsperson?

8.4 The Prospects for Institutions

9.1.1 The Inner Illogic of the Law

232

234

8.3 State Responsibility

8.3.1 Legislature

8.3.2 Executive

8.3.3 Judiciary

9.1 Automating the Law

9.1.2 In Fact

9.2 Law as Data

9 Regulation by AI?

209

CONTENTS XIII

9.3 Law as Code 236

9.3.1 Regulation by Design 237

9.3.2 Regulation by Debugging 238

9.4 The Prospects for Regulation 240

Conclusion: We, the Robots? 243

Bibliography 247 Index 280