

THE CAMBRIDGE HANDBOOK OF THE LAW, POLICY, AND REGULATION FOR HUMAN–ROBOT INTERACTION

This volume provides a unique perspective on an emerging area of scholarship and legislative concern: the law, policy, and regulation for human–robot interaction (HRI). The increasing intelligence and human-likeness of social robots points to a challenging future for determining appropriate laws, policies, and regulations which impact the design and use of artificially intelligent robots. In response to increasingly smart, expressive, and humanoid robots, Japan, China, South Korea, and the United States, along with the European Union, Australia, and other countries are beginning to determine how to regulate this emerging class of AI-enabled robots. Their efforts are concerned with determining the appropriate law to apply, what public policy to implement, and addressing dilemmas of applied ethics which are affected by our personal interactions with social robots. The volume's interdisciplinary approach dissects both the specificities of multiple national and international jurisdictions but also the moral and legal challenges posed by human-like and increasingly smart robots. As robots become more like us, so too will HRI raise issues that are currently triggered by human interactions with other people. Therefore, it is interesting to ask, are there any laws which apply to people and their interactions with each other, that will not apply to future versions of increasingly smart, expressive, humanoid, and anthropomorphic robots? This volume is a step in the direction of answering that question and contributes to the emerging debate on how to regulate AI-enabled entities.

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The Cambridge Handbook of the Law, Policy,
and Regulation for Human–Robot Interaction

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I dedicate this book to my family members and especially my daughter Jessica (who has a chapter in the volume) operating with petaflop (and beyond?) computing power and to Bailey with 5.8×10^8 computing power and to current AI-enabled robots operating with exaflop and beyond computing ability. Special request to next generation and beyond robots – please be kind to my future progeny!

Woodrow Barfield

This book is dedicated to my grandmothers Yu-Chih and Bi, who served as great inspirations to me. Their support was vital in allowing me to continue my investigations into human–robot coexistence.

Yueh-Hsuan Weng

I dedicate this volume to my grandchildren, Vera and Lucio. They helped me visualize the mid- and long-term challenges of AI robots, and how to address them.

Ugo Pagallo

Contents

<i>List of Figures</i>	<i>page</i> xi
<i>List of Tables</i>	xv
<i>List of Contributors</i>	xvii
<i>Foreword</i>	xxxv
Hiroshi Ishiguro	
<i>Preface</i>	xli
Woodrow Barfield, Yueh-Hsuan Weng, and Ugo Pagallo	
 PART I AN INTRODUCTION TO THE LAW, POLICY, AND REGULATION FOR HUMAN–ROBOT INTERACTION	
1 Introduction to the Law, Policy, and Regulation for Human–Robot Interaction	3
Woodrow Barfield, Yueh-Hsuan Weng, and Ugo Pagallo	
2 Anthropomorphism and Human–Robot Interaction	17
Ricarda Wullenkord, Dimitri Lacroix, and Friederike Eyssel	
3 Human–Robot Interaction: Implications for Law, Policy, and Regulation	57
Woodrow Barfield and Thomas B. Sheridan	
4 Trust-Based Interfaces in Human–Robot Interaction: Context, Communication, and Information	70
Massimo Durante	
5 Robots, Regulation, and the Changing Nature of Public Space	84
Kristen Thomasen	
6 Challenges of the Legal Protection of Human Lives in the Time of Anthropomorphic Robots	100
Kamil Mamak	
7 What Will Robot Laws Look Like? Considering Code, AI and Human Laws	115
Zsolt Zódi	

8	Oversight Boards for Regulation of AI-Enabled Robots Adam Douglas Hill	134
9	Building a Smart Legal Ecosystem for Industry 5.0 Pompeu Casanovas	145
PART II ISSUES AND CONCERNS FOR HUMAN–ROBOT INTERACTION		
10	I, Robot? Legal Personality for Robots and the Android Fallacy Simon Chesterman	173
11	“Legal Being”: Going beyond the Debate of Legal Personhood for “Intelligent” Nonhumans Tatsuhiko Inatani	193
12	Robot Romance Margaret Ryznar	207
13	Robot Natives: Future Design and Regulations for Baby Robot Interaction Eduardo B. Sandoval, Mark Billingham, and Massimiliano (Max) Cappuccio	232
14	Should Social and Assistive Robots Integrated within Home- and Healthcare Services Be Universally Designed? Diana Saplacan Lindblom, Zada Pajalic, and Jim Torresen	252
15	Regulating Emotional Artificial Intelligence in Cars Lachlan Urquhart and Andrew McStay	288
16	Some Critical Thoughts on Anthropomorphic Social Robot Design Elisabeth Hildt	302
17	A Critical Analysis of Consent in Human–Robot Interaction Naomi Lintvedt	313
18	Rosie Is a Rental: What Thriving Interactive Robotics Could Mean for Our Society AJung Moon and Jimin Rhim	341
19	Bots against Bias: Critical Next Steps for Human–Robot Interaction Katie Seaborn	362
PART III ETHICS, CULTURE, AND VALUES IMPACTED BY HUMAN–ROBOT INTERACTIONS		
20	Robot Ethics for Interaction with Humanoid, AI-Enabled, and Expressive Robots Jessica Barfield	393
21	The Ubuntu Robot: Toward a Relational Conceptual Framework for Intercultural Robotics Mark Coeckelbergh	408

	<i>Contents</i>	ix
22	Ethical, Legal, and Social Concerns in the Application of Social Robots in Religious Settings: A Case Study of the Catholic Robot SanTO Gabriele Trovato and Yueh-Hsuan Weng	421
23	Helpers for Helpers: Ethical and Legal Considerations for Long-term Care Robots Chih-hsiung Chen	434
24	Ethical Design and Standardization for Robot Governance Yueh-Hsuan Weng	447
25	Eight Recommendations for Ethical and Legal Assessments of Robotic Systems Interacting with Humans Thomas Burri, Markus Christen, Juliane Beck, and Daniel Trusilo	465
26	Cultural Differences in Social Robot Perception Kerstin Haring	484
27	Moral Interaction with Social Robots Takayuki Kanda	496
28	I’m Not Like the Others, I’m Your Friend: Toward an Ethics for AI in Behavioral Interventions and Choice Architectures Vivek Nallur and Ken Bell	509
29	Personal Autonomy and Machine Autonomy in Human–Robot Interaction Satoshi Narihara	522
30	Robots in a Civilized Society: Should Robots Be Taught to Adhere to Social Norms? Omri Rachum-Twaig and Ohad Somech	534
31	Racialization and Bias toward Humanoids Kumar Yogeeswaran and Christoph Bartneck	556
32	Privacy Considerations for Socially Assistive Robots Eduard Fosch-Villaronga, Hadassah Drukarch, and Bart Custers	573
33	Privacy and Transparency in Human–Robot Interaction Chih-hsing Ho	591
	PART IV LEGAL CHALLENGES FOR HUMAN–ROBOT INTERACTION	
34	Robotic Torts Alice Guerra, Francesco Parisi, Daniel Pi, and Levi Seidel	607
35	Limits of Criminal Law Regulation of Robotics: The Russian Federation Law Perspective Ildar R. Begishev	621

36	Robot Criminal Liability Ying Hu	638
37	The Use of Artificial Intelligence in Criminal Proceedings with Robot Judges as a Different Dimension Seda Yağmur SÜMER	656
38	The First Amendment and Robots in the Virtual and Physical Worlds Marc Jonathan Blitz	675
39	Humanoid Robots and Consumer Law and Policy Mateja Durovic and Danai Skevi	702
40	Therapy without Therapists: Human–Robot Interaction under the EU Medical Device Regulation and the Artificial Intelligence Act Martin Ebers	724
41	A Legal Analysis of a Social Robot: The Appropriation of Ideas and Labor Juliya Kharitonova	753
42	Considering the Tax Policy Implications of Automation and AI-Enabled Robots Roberta F. Mann	769
43	Humanoid AI Systems for Healthcare in Outer Space: A New Generation of Opportunities and Legal Puzzles Ugo Pagallo	784
44	Ensuring Accountability for Robots and AI under Criminal Law Monika Simmler	798
45	Intelligent Industrial and Service Robots: A Discussion of International Human Rights Abbas Basiri	813
46	Concluding Thoughts on Future Directions in the Law, Policy, and Regulation for Human–Robot Interaction Woodrow Barfield, Yueh-Hsuan Weng, and Ugo Pagallo	831

Figures

1.1	An example of an anthropomorphic robot with a set of skills and abilities offering challenges to law, policy, and regulations for human–robot interaction.	page 5
1.2	Human–robot interaction with robots emphasizing interpersonal interactions.	6
2.1	A car. “White BMW car seen from front” by QYYZ is licensed under CCo.	18
3.1	Master–slave manipulator, with French roboticist Jean Vertut and Thomas Sheridan.	63
3.2	KAIST robot opening a valve.	64
9.1	<i>Smart Industry Ecosystems</i> . NIST general framework for Resilient Manufacturing Ecosystems through AI.	148
9.2	OPTIMAI placement within the RAMI 4.0 cubic model. Adapted from the original Graphic © Plattform Industrie 4.0 and ZVEI, and retrieved from Plattform Industrie 4.0 (2018).	151
9.3	Functional mapping of the OPTIMAI Architecture into IIRA, based on the alignment to RAMI 4.0.	153
9.4	Topological view of OPTIMAI architecture through the Smart Factory framework perspective.	155
9.5	OPTIMAI Conceptual Architecture Diagram.	156
9.6	Middle-out (MO) and Inside-out (IO) multistakeholder legal governance approach over the functional mapping of the OPTIMAI Architecture into IIRA, based on the alignment to RAMI 4.0.	162
9.7	Legal Compass of the Rule of Law.	162
9.8	Current procedure to be automated in a Hydraulic lift Power Unit Quality Control.	166
12.1	The Sophia Robot by Hanson Robotics.	210
12.2	The robot, Nadine, with her creator Professor Nadia Thalmann.	211
12.3	Comedian Whitney Cummings (left) commissioned a robot of herself (right) for her Netflix special <i>Can I Touch It?</i>	212
12.4	The robot, Aiko, a female companion.	219
13.1	Interaction with child in a controlled environment. Child and Robovie January 2023. Courtesy of Prof. Kanda and team.	239
13.2	Paro robot has been used in different populations as seniors and children. Dr. Takanori Shibata and PARO by Gerldshields11, June 2018. CC by SA 4.0.	239

13.3	Papero was designed as a companion robot capable of social interaction. PaPeRo by Yogyo from Yokohama, Japan, December 2019. CC 2.0.	239
13.4	Ifbot follows similar design philosophy than paper aiming interact with humans in domestic environments. ifbot by Newsky Koumur, March 2019. CC by SA 4.0.	240
13.5	Pleo has been a popular social robot to work with children. Pleo Robot by Jiuguang Wang, November 2009. CC by SA 3.0.	240
13.6	Orio was designed with several degrees of freedom aiming robot expressiveness. Qrio Robot by Dschen Reinecke, July 2004. CC by SA 3.0.	240
13.7	Nao robot has been one of the most used robots in human–robot interaction research. Le robot Nao, Futur en Seine by Jean Pierre Dalbéra from Paris France, June 2015. CC by 2.0.	241
13.8	Pepper offers an additional mean for interaction using a screen in its chest. SoftBank Pepper robot by Tokumeigakarinoashima, July 2014. CC Zero, Public Domain Dedication.	241
13.9	Irobi, is not in production anymore but was designed for multimodal interaction with children, seniors and healthcare applications. iRobi from YujinRobot by YujiRobot, 2023. Courtesy of YujinRobot Inc.	242
13.10	Future baby robot interaction scenarios requiring a multidisciplinary discussion regarding the ethical considerations. All images from Jonathan Shawn and Eduardo B. Sandoval, 2023.	245
14.1	Examples of different zoomorphized and sociomorphized robots.	267
14.2	Anthropomorphized and sociomorphized robots with a child appearance.	269
14.3	Examples of robot interfaces that are sociomorphized.	270
14.4	Humanoid robots that are anthropomorphized and sociomorphized, with different robot capabilities.	271
14.5	Model of the interplay between robots’ regulatory aspects, with robot’s physical and virtual interface.	273
18.1	Photo of a Jibo robot from Jibo Inc. taken in October 2022. While the hardware remains fully functional, it no longer performs majority of the interactive functions it was purchased for. The companion smartphone app (Jibo app) that the robot relies on does not authenticate existing users, enable connectivity to Wi-Fi, or customize its interactive features.	343
18.2	Results of a poll conducted in 2015, courtesy of Open Roboethics Institute. Majority of the participants ($n = 325$) indicated that a robot should not deliver Emma, an alcoholic, a drink if she is not the owner of the robot.	344
18.3	Responses to another question posed to the same set of participants as that of Figure 18.1. Courtesy of the Open Roboethics Institute.	345
20.1	Various factors, concepts, and concerns that influence human interaction with robots.	397
20.2	Discrimination against robots as a function of robot appearance and who may experience harm by the discriminatory acts.	403
22.1	Extension of Haslam’s model of dehumanisation in order to contain robots that have connotations related to the sacred and the superhuman.	423
22.2	SanTO (a) and SanTO-PL (b). In real-life scale, SanTO-PL is 2.5 times larger. Pictures of CelesTE are not yet available for reasons of intellectual property.	425
22.3	SanTO-PL in a church in Poland, in an interaction filmed by the BBC.	431

List of Figures xiii

24.1	Solutions on using standards to overcome the AI-regulatory pacing problem.	449
24.2	Lovot – Its potential privacy concerns and the design of Privacy Mode Switch.	458
24.3	Cases of compliance or violation of the APPI law for a robot acting as a “personal information handling business operator” (PIHBO).	460
24.4	Three experiments on legal validation for GDPR’s consent and embodiment.	462
26.1	Two representative examples of search results with term “drawing of computer” and “How to draw computer” by LetsDraw.it are licensed under CC BY 2.0.	486
26.2	Representative results from an image search with the term “drawing of robot.” All these images (a, b, c, d, e, & f) are “Robot sketch” by Mike McDonald is licensed under CC BY 2.0, “Girl robot vector drawing” by OpenClipart is licensed under CC0 1.0, “Retro Robot Line Art” by OpenClipart is licensed under CC0 1.0, “Open-mouthed robot” by OpenClipart is licensed under CC0 1.0, and “Robot vector drawing” by Public domain vectors is licensed under CC0 1.0.	487
26.3	An example of a zoomorphic robot “A black cat robot” by Pixexid is licensed under CC BY 4.0, an example of an android robot “Sophia (robot)” by Ritchie333 is licensed under CC BY 2.0, and an example of a humanoid robot “Robot holding a black screw on gray background” by Marco Verch Professional Photographer is licensed under CC BY 2.0.	488
27.1	Example of O-space formation in human–robot interaction.	499
27.2	A robot that predicts a visitor’s motion course (a: black, dotted line) and plans its own course (a: red solid line) to meet from frontal direction of her (b).	500
27.3	What is socially appropriate depends on situations. When giving a flyer, it is better for the robot to approach from slightly diagonally in front of visitors.	500
27.4	An example of crossing trajectories of a robot with conventional obstacle avoidance methods (a) and socially appropriate method (b).	501
27.5	A scene where a person walks side by side with a social robot.	502
27.6	When a robot interacts with visitors in a narrow collider, people staying nearby the robot (indicated with red circle) occupied the space, resulting in congestion for other pedestrians.	502
27.7	Robot abuse (First: obstructing, Second: punching, Third: kicking).	503
27.8	Social robot with an admonishment approach behavior.	505
27.9	An interaction to deal with unreasonable complaints.	506
30.1	Different steps in a general framework for designing robots to adhere to social norms.	553
32.1	Different types of privacy in relation to SAR privacy issues.	580
34.1	Manufacturer residual liability rules.	616
37.1	An example of the Ponzo illusion.	663
42.1	Sources of federal tax revenue, 2019.	774
42.2	Capital gains and individual income tax rates compared, 1954–2020.	776
46.1	The regulation of human–robot interaction before and after the singularity.	832

Tables

8.1	Example of cost saving government regulation with single regulator	<i>page</i> 141
8.2	Behavioral biomarkers example	142
8.3	Dispersed risks in behavioral biomarker example	142
8.4	Adding a second regulator to the behavioral biomarkers example	143
8.5	Adding a high-cost oversight board to the regulatory mix	143
14.1	Universal Design principles and guidelines from the Centre for Excellence in Universal Design	255
14.2	Universal Design principles	256
14.3	Universal Design principles applied to robots – Illustrative examples	258
14.4	Overview of the findings under the Universal Design theme	265
14.5	Categories, principles or recommendations, and guidelines	272
14.6	Mapping Universal Design principles and guidelines with our recommendations	274
15.1	Summary of legal and design requirements around EAI in cars	296
28.1	Sample Relationship-Question Framework for a robotic nudging dog equipped with AIDA	518
28.2	Questions driving adaptive capabilities and nudging	518
28.3	Applying Relationship-Question Framework to an AI-assisted wallet that wants to nudge	519
28.4	Sample actions the AI-assisted wallet could take	520
32.1	Classification of SARs	575
35.1	Selected incidents with participation of robots	628
46.1	This table provides a summary of issues that apply to the class of robots that are expressive, anthropomorphized, intelligent, and humanoid in appearance	834
46.2	Summary of different approaches for the regulation of robots	837

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Dr. Eduardo B. Sandoval is a social robotics researcher at the University of New South Wales, Sydney, Australia since 2018. His work spans different aspects of social robotics,

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Diana Saplacan Lindblom is a researcher at the University of Oslo, at the Department of Informatics, Robotics and Intelligent Systems Research Group (ROBIN). She currently works in Vulnerability in Robot Society (VIROS) research project that investigates privacy, safety, and security aspects related to the use of robots in home- and healthcare services. She is also currently involved in the Predictive and Intuitive Robot Companion (PIRC) research project, investigating models of human prediction and intuitive action that can be implemented in future intelligent robot companions. Another recently funded project (starting in July 2023) that she is part of is the Ethical Risk Assessment of Artificial Intelligence in Practice (ENACT). During 2023, she was a visiting researcher in Japan. Previously, she has worked in the Multimodal Elderly Care Systems (MECS) research project (2016–2020), which investigated the use of a robot as a safety alarm for elderly people that lived independently at home. In addition, she has also worked in Universal Design of Robots (UD-Robots) research project (2022–2023). She received her PhD degree (2020) from the University of Oslo, Norway. She previously worked as a Lecturer in Computer Science at Kristianstad University, Sweden (2013–2016/2020). Recently, she has been listed two years in a row (2021, 2022) as one of the thirty women in Norway changing the field of Artificial Intelligence (AI) – a nomination made by the Norwegian Artificial Intelligence Consortium (NORA). She is currently a board member of the Norwegian Council for Digital Ethics (NORDE), a member of the Standards Norway Committee on AI and Ethics, and a member of the newly established Working Group for IEEE P701 – Recommended Practice for Design-Centered Human–Robot Interaction (HRI) and Governance. She has previously been a committee member of the IEEE Computer Society/Artificial Intelligence Standards Committee, Study Group on Ethical Considerations of Cognitive Robots for Enhancing Human Efficacy (2021–2023), a board member of Tekna Big Data, a Norwegian network for