

CONTENTS

Preface ix

Acknowledgments xiii

Introduction: Crime or Warfare? 1

1. Cyber (In)security: Threat Assessment in the Cyber Domain 16

What, When, and Where? 16

How? 18

Why? 19

Three Ways of Being a Hactivist 21

Conventional Warfare 22

Unrestricted Warfare 24

State-Sponsored Hactivism as a New Form of Warfare 27

2. Is There a Role for Ethics or Law in Cyber Conflict? 33

Irregular War and Cyberwar 33

Ethics and "Folk Morality" 35

Ethics and the Law 40

Ethics and Just War Theory 42

Strategic Plan of the Book 45

Applying Moral Theories in the Cyber Domain 48

3. The *Tallinn Manual*: International Law in the Aftermath of
Estonia 57

International Law Applicable to Stuxnet 58

International Law and State-Sponsored Hactivism 61

The *Tallinn Manual* 64

International Law and the Estonian Cyber Attacks 68

"There Oughta Be a Law!" 73

Why the *Tallinn Manual* Failed 76

4. Genuine Ethics versus "Folk Morality" in Cyberspace 85

The Advantages of Taking the "Moral Point of View" 86

The Challenge of Folk Morality for Authentic Ethics 88

The Origins of Universal Moral Norms	91
Thinking Ethically about Conflict in the Cyber Domain	96
Just War Theory as Part of a "Morality of Exceptions"	98
<i>Jus in Bello</i> and Professional Military Ethics	101
<i>Jus in Silico</i> : Ethics and Just War Theory in the Cyber Domain	102
5. If Aristotle Waged Cyberwar: How Norms Emerge from Practice	109
Distinguishing between Laws and Norms	112
The Methodology of Uncertainty: How Do Norms "Emerge"?	113
Do Emergent Moral Norms Provide Effective Governance?	119
6. Privacy, Anonymity, and the Rise of State-Sponsored Hacktivism	125
Emergent Norms and the Rise of State-Sponsored Hacktivism	126
The Cunning of History	128
Permissible Preventive Cyber Self-Defense	129
Privacy, Anonymity, and the Sectors of Vulnerability	130
Cyber Security Measures for Individuals	131
Privacy versus Anonymity	133
A Limited Justification for Anonymity	135
Restricting Anonymity while Preserving Privacy	137
New "Rules of the Road" for Cyber Navigation	138
7. NSA Management Directive #424: Anticipatory National Self-Defense	142
Preventive War	143
Initial Public Response	147
The Dilemma of Edward Snowden	148
Government Deception and Public Trust	150
Defending National Boundaries and Personal Liberties	151
State Norms for Respecting Sovereignty and Attaining Security	153
Conclusion: Toward a "Code of Ethics" for Cyber Warriors	157
References	167
Index	175