PROOF

Contents

List of Tables and Figures x

Notes on Contributors xi

Introduction

Properties of Technology 3
Phillip Kalantzis-Cope

Part I Digital Communication

1 Technology, Innovation, Power, and Social Consequence 13
Robin Mansell

1.1 The World Summit Awards Benchmarking Arabic Websites: A Case Study of Governance 26
Ilhem Allagui

1.2 Test Driving E-Participation: The Case of Gipuzkoa (Basque Country) 29
Alfonso Unceta

1.3 Visualizing Electricity and Magnetism: The Collaborative Development of a Multimedia Text 32
Jennifer A. George-Palilonis and John Belcher

Part II Defining New Media

2 Emergent Journalism and Mass Media Paradigms in the Digital Society 37
Carlos Elias

2.1 CitizenShift and Parole Citoyenne: The Democratization of Media 50
Reisa Levine

2.2 Presidential Rhetoric in 140 Characters or Less 53
Nathan Angelo

2.3 Web 2.0 Technologies and the Museum 56
Seth Thompson

Part III The Texts of Digital Publishing

3 Academic Publishing at the Crossroads 61
John B. Thompson

PROOF

3.1 The Open Textbook: From Modules to Mash-Ups 71
John W. Warren

3.2 Community and Communion: Books as Communal Artifacts in the Digital Age 75
Yasmin Ibrahim

3.3 Is the 'E-Incunabula' the One Solution for Scientific Communication? 78
José Morillo-Velarde

Part IV The Digital Citizen

4 Digital Citizenship 83
Timothy W. Luke

4.1 Facebook in Egypt: April 6 and the Perception of a New Political Sphere 97
Christopher Wilson

4.2 Grassroots Politics in Popular Online Spaces: Balancing Alliances 99
Julie Uldam

4.3 From Disability to Functional Diversity: ICT and Amartya Sen's Approach 102
Mario Toboso

Part V Power, Knowledge, Surveillance

5 Surveillance, Power and Everyday Life 107
David Lyon

5.1 Full Spectrum Surveillance: NYPD, Panopticism and the Public Disciplinary Complex 121
Brian Jefferson

5.2 The Wired Body and Event Construction: Mobile Technologies and the Technological Gaze 123
Yasmin Ibrahim

5.3 Configuring the Face as a Technology of Citizenship: Biometrics, Surveillance and the Facialization of Institutional Identity 126
Joseph Ferenbok

Part VI Digital Property

6 Whose Property? Mapping Intellectual Property Rights, Contextualizing Digital Technology and Framing Social Justice 131
Phillip Kalantzis-Cope

6.1 Ethical Concerns about Digital Property: The Case of FLOSS Licenses 145
Roberto Feltrero

PROOF

6.2 On/Off the Agenda: Intellectual Property Rights, the UN and the Global Politics of the Internet 148
Mikkel Flyverbom

6.3 Health Traditions in Kerala and Local Intellectual Property Rights 151
Rubeena Aliar

Part VII The Digital Commons

7 Socrates Back on the Street: Wikipedia's Citing of the Stanford Encyclopedia of Philosophy 157
John Willinsky

7.1 The Challenges of Digitally Mapping Marginal Sub-Regions and Localities: A Case Study of South India 172
Aloka Parasher-Sen

7.2 How Open Source Software and Wireless Networks are Transforming Two Cultures: An Investigation in Urban North America and Rural Africa 175
David Yates and Anas Tawileh

7.3 The Secrets of Biblioland: A Case Study 177
Elena Moschini

Part VIII New Infrastructures of Science

8 Towards a Science 2.0 based on Technologies of Recommendation, Innovation, and Reuse 181
Karim Gherab-Martín

8.1 Democratizing the Science of Risk Management – An End-User-Driven Approach to Managing Risks to Drinking Water Systems in First Nations Communities 195
Khosrow Farahbakhsh and Benjamin Kelly

8.2 The Public Debate on Science and Technology: Transgenic Corn in Mexico 198
Julio E. Rubio

8.3 Evolving Publishing Practices in Mathematics: Wiles, Perelman, and arXiv 201
Manuel González Villa

Part IX Digital Aesthetics

9 Fabrication 207
Sean Cubitt

9.1 Closing the Gap between Art and Life: Digital Art as Discursive Framework 219
John Byrne

PROOF

9.2 Digital Art: *Blowing Zen* in the City 221
Melissa D. Milton-Smith

9.3 Digital Aesthetics in Everyday Technologies: A Case Study of the NY Art Beat iPhone Application 223
Tamsyn Gilbert

Part X Digital Labor

10 Redrawing the Labor Line: Technology and Work in Digital Capitalism 227
Eran Fisher

10.1 Work and Skills in the Telecommunications Industry 245
Owen Darbishire

10.2 US Policy Approaches to Digital Labor 247
Madeline Carr

10.3 Employability and Sustainability in the Graduate Job Market: A Case Study of ICT Graduates in Malaysia 250
Suriyani Muhamad

Part XI Technology, Culture, and Society

11 The Empirical Case for Taking a Technosocial Approach to Computing 255
David Hakken and Maurizio Teli

11.1 The Punjab Peasant and Digital Culture 270
Anjali Gera Roy

11.2 Social Ecology of Museums in the Digital Domain 272
Amareswar Galla

11.3 Information Technology and the Construction of Moral Reasoning, Empathy, and Affect: Crossing Time, Space, and Attitudes in Virtual Reality 274
William James Stover

Part XII Digital Identities

12 The Internet, Gender and Identity: Proletarianization as Selective Essentialism 279
Marcus Breen

12.1 Virtual Glass Houses: The Process and Politics of Bisexual Identity Discussions in Online Diary Communities 293
Emily D. Arthur

12.2 UsMob: Remapping Indigenous Futures in Cyberspace 296
Jan Lüdert

PROOF

12.3 Gender Structure, Gender Identity, Gender Symbolism and Information Technologies 298
Verónica Sanz

Part XIII Information Globalism

13 Digital Capitalism and Development: The Unbearable Lightness of ICT4D 305
Jan Nederveen Pieterse

13.1 Information and Communication Technologies for Least Developed Countries: A Case Study of the Republic of Malawi 324
Robert M. Bichler

13.2 Dot.Com Marriages in India: Examining the Changing Patterns of the Arranged Marriage Market in India 327
Mili Kalia

13.3 Bridging the Digital Divide in Developing Countries: A Case Study of Bangladesh and Kuwait 330
Charles C. Chiemeke

Part XIV Reading Machines

14 Do E-Book Readers Understand Digital Documents? 337
Jean-Claude Guédon

14.1 In Praise of Paper: Cultural Prejudice and the Electronic Book Market in Spain 352
José Luis González-Quirós

14.2 Why E-Readers Will Not Gain Widespread Popularity 355
José Antonio Millán

14.3 Hyperactive: The Digi-Novel 359
John W. Warren

Conclusion

Mapping Emerging Digital Spaces in Contemporary Society 365
Karim Gherab-Martín

Index 369

PROOF

Introduction

PROOF

Properties of Technology

Phillip Kalantzis-Cope

Our aim in bringing together this collection of papers is to uncover ways in which "the digital" is at once encroaching, reformulating and creating social spaces. Indeed, at times the digital may even reconfigure what it means to be social. In order to capture the complex dimensions of this digital shift we have included a comprehensive range of disciplinary fields—politics, sociology, science, philosophy, informatics, public policy, communications and media studies.

The notion of "properties" serves as the central conceptual tool of the collection, the binding element that ties together the disparate disciplinary perspectives and empirical contents of this book. There are three dimensions to the notion of "properties." The first sense of "property" is reflected in the book's structure. Each thematic area represents one aspect of the social transformations occurring around digital technologies, identified in order to present a comprehensive account of the spectrum of social issues arising from digital technologies. Within this context we have selected a mix of big picture theoretical analysis for the lead anchor chapters in each section, followed by detailed examples of the diverse effects of each general transformation in the accompanying case studies. The second sense of "property" is embodied in the expositions of the emergent and unique "properties" of digital technologies in general. The third sense of "property" emanates from the framing of digital technology within a longer continuum of action and thought associated with technological development in general. Each of our contributors, in their own particular way, addresses one or more dimensions of these properties.

Robin Mansell leads the first part on Digital Communication. Her chapter provides a thorough exploration of whether or not, as is often argued, information communication technologies (ICTs) can be tools for emancipatory social change. This chapter challenges our thinking to consider whether a global one-size-fits-all approach to technology is appropriate for the socially disparate web or for people who share and communicate through these technologies. Mansell also asks us how, and in what ways, the new

PROOF

technologies themselves communicate a social vision. Three case studies then provide striking and differing insights into the forces shaping digital "communication" technologies. Ilhem Allagui, in his snapshot of Arabic websites, illuminates how the nation-state continues to play a role in shaping digital content. Alfonso Unceta introduces us to e-participation in the Basque country of Spain and the ways digital networks may or many not aid political, social or economic participation. Completing this part, Jennifer A. George-Palilonis and John Belcher present the ways ICTs can facilitate collaborative learning processes.

Part II, "Defining New Media," is anchored by Carlos Elias, who frames the current digital shifts within a broader structural transformation in the dominant hierarchical order of knowledge creation. He focuses on how Web 2.0 technologies and the rise of a "convergence culture" are transforming the profession of journalism. He questions the nature of "credible" news, and the emerging boundaries between amateur and professional reporting. The case studies that follow illustrate the general issues raised by Elias in a variety of ways. Reisa Levine presents us with a glimpse of community engagement in digital production within the Canadian film industry. Nathan Angelo investigates Barack Obama's use of Twitter and the way in which new media technologies reflect the changing nature of political communication. Seth Thompson explores how digital technologies are reshaping the relationship between "object and audience" in the museum.

Part III, "The Texts of Digital Publishing," begins with John B. Thompson's chapter on the ways digital technologies are shaping the future of academic publishing and university presses, hitherto stalwarts in the knowledge production industry. This detailed overview of the publishing industry provides the base from which we can examine the digital transformation of "information" production, workflow and dissemination. John W. Warren's case study throws light on the emergence of free online textbooks, and the benefits of the open access publishing business model. Yasmin Ibrahim highlights the emerging cultural and political economy of digital book production. José Morillo-Velarde's case study reveals a temporal shift in the production of text, from periodical to instantaneous artifact.

In Part IV, "Digital Citizenship," Timothy W. Luke leads the discussion, focusing on the ways digital networks are encroaching and reshaping traditional boundaries of "rights" and "duties." This, he argues, suggests a transformation of both the definition of "citizenship" and the spatial boundaries of political membership—the "what," "where" and "who" of "digital citizenship." How asks whether our connectedness shapes the way we participate. The case studies that follow demonstrate the "political" uses of digital technologies and networks. Christopher Wilson highlights the use of Facebook in political activism in Egypt. Julie Uldam explores how social networking sites such as Facebook and YouTube can be used to facilitate global grassroots political movements. And Mario Toboso shows us how

PROOF

ICTs can help people to cross boundaries of political participation, facilitating a "functional diversity" within digital society.

David Lyon anchors Part V, "Power, Knowledge, Surveillance." In this chapter Lyon details how our individual and collective digital information trails are not simply used to track personal preferences within social and economic networks, but are also representative of a broader logic of surveillance in the information age. In the first of the case studies, by focusing on the tactics of the New York Police Department (NYPD), Brian Jefferson demonstrates how digital technology maps criminality and political subjectivity. Yasmin Ibrahim maps the range of "participants" in what has been called the "surveillance society"—from CCTVs to citizen journalists. Finally, Joseph Ferenbok illuminates how even our face becomes a site of digital identification (digital signature).

In Part VI, "Digital Property," I contextualize the unfolding debates and visions for social justice arising from "digital" intellectual property rights, and the broader question of the ownership of intellectual goods in general. The case studies that follow present reference points for understanding the global dynamics of this digitally propelled social transformation. Roberto Feltrero points to the emergence of the free and open source software movement and peer-to-peer production as "ethical" statements within the digital domain. Mikkel Flyverbom explains the intersection of intellectual property rights and Internet governance in order to illuminate the emerging modalities of global governance. And Rubeena Aliar, through a case study of health traditions in rural India, provides insights into how property regimes that privilege the individual owner displace cultural forms based on collective ownership.

John Willinsky anchors Part VII, "The Digital Commons." In this chapter he explores open source collaborative knowledge production—the fundamental logic of the digital commons—through a study of Wikipedia. He presents us with a clear example of the ways in which such approaches to digital technology can promote "openness" by pointing to the diverse make up of participatory actors in the commons. Aloka Parasher-Sen follows, with a case study of a digital mapping exercise in Southern India, exploring the new ways of mapping space, culture and identity. David Yates and Anas Tawileh draw our attention to the digital divide in rural Africa and urban North America, arguing that this divide is not simply a case of the developed versus the developing world, but one that creates a new cartography based on differing access patterns, thereby forcing us to think about what is "common" about the "commons." Elena Moschini illuminates the demands and possibilities of "information literacy," based on the emerging new "common" language of the digital.

Karim Gherab-Martín anchors Part VIII, "New Infrastructures of Science," exploring the intersection of Web 2.0 technologies, the open source movement and the specific character of scientific knowledge. He presents us with a way to navigate the challenges of "digital" scientific endeavor based on

PROOF

the idea of "open reuse." The case studies that follow provide grounded reference points for understanding the contours of technology and scientific endeavor. In their example of approaches to water management, Khosrow Farahbakhsh and Benjamin Kelly force us to think outside the "digital box," in order to grasp the cultural dynamics of scientific development in general. Julio E. Rubio, through an examination of the issues surrounding transgenic corn in Mexico, illuminates the need to contextualize the digital within the broader transformative effect of scientific research—for example bioengineering and the interactions among stakeholders in the validation of scientific endeavor. Finally in this section, Manuel González Villa highlights the displacement at times of traditional models of scientific knowledge validation in digital knowledge communities, specifically the mathematical community.

Part IX, "Digital Aesthetics," is framed by Sean Cubitt's chapter, which uses the concept of "fabrication" as an historical and social process, and examines the relationship between the aesthetic experience of digital technologies and the material world. John Byrne then asks what the digital reveals about "radical art." What pushes the boundaries of the aesthetic experience? Melissa D. Milton-Smith examines the boundaries of "art" and "new media" and Tamsyn Gilbert presents us with the i-phone application Art Beat, which demonstrates the relationship between art and function in new digital technologies.

Part X, "Digital Labor," is anchored by Eran Fisher's analysis of the emergence of "prosumption," a hybrid of production and consumption, a mode of work characterized by networked "digital" labor practices. The meta-argument of this chapter is that this shift in labor practices reveals a "new spirit of capitalism" throwing into question the emancipatory potential of digital network technologies. The three case studies then provide us with differing examples of the spaces, practices and dynamics of "digital" labor. Owen Darbishire illuminates the emergence of an economy of servicing the digital with the UK telecommunications industry. Madeline Carr details how the US government has approached its digital labor force and its relationship to "national interest," and Suriyani Muhamad sheds light on the ICT job market in Malaysia.

David Hakken and Maurizio Teli anchor Part XI, "Technology, Culture, and Society." Their chapter examines the balance between a purely technological base for computing studies, and what they call a "socially conscious computing" or "technosocial" approach. At the core of this chapter is the question of who participates in the processes of technological development. The three case studies then explore this question in various ways. Anjali Gera Roy presents the global digital network of Bhangra production and dissemination, making the case that the digital, rather than simply being the conduit for the voice of the "mainstream," also can "globaliz[e] the voice of the margin." Amareswar Galla deals with the digitization of museum artifacts, focusing on how we collect, protect and open access to intangible

PROOF

heritage, balancing questions of whose voice is included, who is collecting and who retains ownership. William James Stover presents a classroom setting where virtual modeling and simulation can encourage critical thinking by taking political questions and "digitally" abstracting them, in order to solve real world issues.

Part XII, "Digital Identities," is anchored by Marcus Breen, who analyzes Internet pornography, exploring the ways in which the formation of identity on the Internet is a reflection of deeper social transformations within our shared cultural landscape. This chapter compels us to think about the forces and boundaries of "digital" identity formation. The three case studies that follow provide insights into the very different ways in which "identity" is formed, advocated and distributed on the Internet. Emily D. Arthur illuminates bisexual chat rooms and personal web diaries as forums to explore sexuality, presenting them as windows to the world and into one's own experience. Jan Lüdert unveils the development of the "UsMob" website, as a dialogue between an indigenous Australian community and the "digital social"—indigenous and non-indigenous people. Finally, Verónica Sanz sheds light on the gender disparities of those receiving computer science degrees.

Jan Nederveen Pieterse anchors Part XIII, "Information Globalism." This chapter takes a critical look at the logic of "information communication technology for development" and its relationship to the spread of "digital capitalism." The three case studies then delve into the issues of digital global interconnectedness. Robert Bichler takes us to Malawi, where the cost of a telephone line is triple the cost of the Internet service. Mili Kalia's study on dot.com marriages in India illuminates not just the effects of a material class order, but also a status order within Indian society that is being recreated in emerging "virtual matrimonial" networks. Charles C. Chiemeke, while noting the effects of the digital divide, provides an example of a Bangladesh Village Voice project "that provides loans to women borrowers for phone equipment and subscriptions to cellular services."

In Part XIV, "Reading Machines," Jean-Claude Guédon's anchor chapter outlines the social and technological ecologies around e-readers, focusing on the flow of documents and information across information communication technologies—specifically through the iPad. In the first case study, José Luis González-Quirós draws our attention to the cultural dynamics of the e-book market in Spain. José Antonio Millán critically addresses the future of the e-reader and John W. Warren outlines the distinct affordances of the "digital novel."

Through its excursions into a broad range of digital spaces and social practices, this book aims to identify the specificities of the digital moment—the emergent and unique "properties" of digital technologies in particular, and the novelties and continuities of these technologies in the wider frame of reference of technological development in general. In the analyses of the

PROOF

book we find that solutions to "virtual problems" are windows onto broader social contestations. Untangling the digital requires an untangling of the social, too. In other words, it is not possible to separate meaningfully the digital from the non-digital space.

Digital technologies can "open" new modalities of social, economic and political practice. However, at the same time the social can "close" emergent social transformations through the matrix of social practices that are built on foundations laid in digital networks. So, the argument that historic relations of power around race, gender, class and identity might be in some ways transcended in digital spaces might in fact be a utopian hope, painfully unrealizable as the digital becomes a new space for their reproduction. In this perspective, nothing changes fundamentally with the advent of the digital. In another perspective, though, as we are drawn together in new, digitally mediated social spaces, an inevitable increase in participation could emerge, which in turn might be taken to constitute enhanced "civic" belonging. Furthermore, in such a context, the integration of "civic" and "citizenship" produces a feedback loop of expectations and practices built on consent and participation. This may have flow-on effects into the material world. The new openings for participation in digital spaces, however, suggest that parallel openings are required in the world of social and material resources.

In order for there to be a productive conceptual and practical interaction between the "digital" and the "material," we need to take into account the spectrum of social transformations underway, as reflected in the "properties" of this book. For example arguments around labor practices need to be in conversation with culture, surveillance with participation in open source production, the digital divide with notions of citizenship, and so on. We also need to critically address emergent "properties" of digital technologies, as conduits for social transformation. Then we need to contextualize these "hopes" and "visions" of transformation within a broader historical and technological vision.

This book seeks to propose that we need to think more critically about the properties of new technologies, the cultural content that flows through them, and the social forms new technologies both reproduce and disrupt. This is the concretely social of our "digital future," the effects of technologies-in-use. The trap of technological determinism, at a fundamental level, is born out of misrecognition of the social nature of technological development and should therefore be eschewed. Likewise, technological development cannot be regarded as unidirectional, acultural or apolitical. Rather, the evolution of new technologies provides us with insights into the multifaceted, historically located, transformative dynamics of social agency.

Our aim in this book is to explore the properties of digital technologies in order to discern a range of cultural, social, economic and political trajectories or explanations of effects. In addition, we want to prompt readers to think

PROOF

constructively and strategically about the alternative pathways and transformative possibilities that the properties of technology allow for our social futures. We hope that this collection provides an overview of recent thinking about these matters, and that this in turn might suggest an agenda for new intellectual work and provide inspiration for practical action.

PROOF

Index

Abbate, J., 90
Abdul-Raouf, D., 97
Aboriginal Youth project, 296
abortion debate, 163–4
academic practices, 157–69, 177–8
academic publishing, 61–70, 182, 186, 189–90, 201–3
access, 5, 90–1, 175–6, 270–2, 305–6, 314, 330–2
Ackerman, M., 260
actuarial practices, 117–18
Adajian, T., 166–7
added value, 185–9, 191–2
Adobe, 33, 215
Adorno, T., 239
advertising, 290, 308
aesthetics, 6, 207–17, 223–4
Africa, 5, 175–6, 305–6, 310, 312, 318
agency, 17–18, 91–4, 198, 229
Agger, B., 90
Aglietta, M., 239
Agro-Bio, 199
Ahuja, M. K., 298
Akbar, M. S. U., 330–1
Alcatel-Lucent, 324
Alden, C., 307
Alexander, B., 360
Alexander, J., 29
Alexander, P., 166
Aliar, R., 5
Allagui, I., 4, 27
Al Qaeda, 91–2
alternative computing tradition, 261–4
Althusser, L., 290
Altman, L. K., 191
Álvarez, F. G., 38
amateur production, 232–4, 237, 368
amateur reporting, 4–5, 38, 45, 123–4
Amazon, 75, 181–2, 186, 338, 340, 342, 345, 349
analytical perspectives, 13–16
Anderson, B., 75
Anderson, C., 237–8
Anderson, G., 56
Anderson, R. I., 19
Andhra Pradesh, 172–3
Andrejevic, M., 114
Angelo, N., 4
antitrust, 285–6
Appadurai, A., 265, 270, 329
Apple, 216, 262, 338, 341, 344–6, 349
April 6 movement, 97–8
Arabic websites, 4, 26–7
Arends, B., 357
Aristotle, 38, 158–61, 166, 168–9
Aronowitz, S., 239
Art Beat, 6, 223–4
Arthur, E. D., 7
art/life boundary, 219–20
ArtsConnectEd, 56–7
arXiv, 190, 201–3
assemblage of surveillance, 108–9, 112, 116, 126–7
Atari Democrats, 247–8
Atlantic Monthly, 46–7
Atton, C., 99
Australia, 7, 296–7
authorship, 353–4
Autodesk, 215
autonomy, 63, 92, 135, 139, 142–3, 236, 238, 288, 347
avatars, 39, 360
averaging, 210–11

Baba, H., 75
Backlund, P., 188
Bailey, J., 265
Ballabio, E., 103
Ball, K., 114
Bangladesh, 7, 40, 331
Bannett, E. T., 281
Barbrook, R., 214
Barlow, J. P., 89, 287
Barney, D., 289
Bartels, F., 330
Bartels, L. M., 247
Basque Country, 4, 29–31
Bateson, G., 211

PROOF

Bath, C., 299
Baudrillard, J., 92, 208, 215, 221–2
Bauer, B., 163
Bauman, Z., 109, 240
Bauwens, M., 214–15
BBC, 38, 40
Beckett, J., 259
Beck, K., 263
Beck, U., 84, 94
Belcher, J., 4
Bell, A., 14, 221
Bell, D., 14, 237–8
Benco, E., 178
Benkler, Y., 15, 134–5
Bennett, J. G., 44
Berland, J., 289
Berners-Lee, T., 91, 93
Bhangra, 6, 270–1
Biblioland, 177–8
Bichler, R., 7
Bigo, D., 109
Bijker, W., 238
Bin Laden, 39–40
biological prospecting, 152–3
biometric systems, 109, 116, 126–7
biotechnology, 6, 131–3, 137–8, 198–9
bisexual chat rooms, 7, 293–4
Bjerknes, G., 262
Blackwell, 68
Blanco, J., 44
Bliumis, B., 53
Bloch, E., 215
blogging, 38, 43–5, 47, 56, 84, 229, 293
Blomberg, J., 262
Blowing Zen, 221–2
Bødker, K., 263
Bogost, I., 281
Boltanski, L., 240, 242
book market, 69–73, 75–6, 78–9, 352–4
bookmarking, 183–5
Boorstin, D., 123
boosterism, 312–13
borders, transformation of, 365–8
Borgmann, A., 239
boundary crossing, 84, 86, 148, 233, 271, 340, 365–8
Bourdieu, P., 62, 75, 228, 284
Bowker, G., 115, 262
Bowker, R. R., 186
Braga, C. P. A., 324
Braithwaite, J., 148, 311
Braman, S., 19
brand prestige, 37–8, 44, 48, 100
Bratteteig, T., 262
Braverman, H., 239
Brazil, 149, 290
Breen, M., 7, 280, 284
British Telecom, 245–6
Brooks, K., 229
Brousseau, E., 14
Brügger, U., 216
Bryson, M. L., 293
Buckley, C., 121
Burrows, R., 112
Butler, J., 299
Byrne, J., 6

Caldwell, J. C., 328
call centers, 307
Cambridge University Press, 64, 67
Campbell, D., 305
Camp, T., 298
Canada, 4, 50–1, 118, 195–7
Cao, H. D., 203
capabilities, 20, 73, 102–3, 246, 251, 307–8, 310, 315
capitalism, 6–7, 134–5, 137–8, 140–1, 227–42, 289, 309, 312–15, 319
Carr, M., 6
Carr, N., 85
Carroli, L., 293
cartographies, 5, 139, 223–4, 366
Castells, M., 15, 20–1, 113, 146, 235, 238–40, 242, 317
Catholic Encyclopedia, 160
Catholicism, 163–4
CCTVs, 5, 111, 121, 124
censorship, 98, 353–4
Certeau, M. de, 18
Chadwick, A., 288
Challenge for Change program, 50
Chan, H., 76
Chapela, I., 198
Charette, R., 258, 260
charge-coupled device, 208–13
Chhotray, V., 26
Chiapello, E., 240, 242
Chiemeke, C. C., 7, 330
China, 84, 114, 216, 220, 319
Chinn, M. D., 175

PROOF

Chouliaraki, L., 228
CIBIOGEM, 198–9
Cisco Systems, 306, 312
citations, 159, 161–4, 182–4, 190
citizen developers, 233–4
citizen journalism, 38, 123–4
CitizenShift, 50–1
citizenship, 4–5, 8, 20, 29, 83–95
civil society, 29, 198–9
CK-12 Foundation, 72–3
Clarke, R., 112–13
classification, 115–17
class issues, 7, 139–41, 239, 241
see also proletarianization
Clinton, B., 247–8, 312
CNN, 38, 40, 42
code transparency, 146
Cohen, D., 216
Cold War, 247
Cold War simulation, 275
collaboration, 4–5, 132, 135, 181, 227, 229, 260–1, 263
collectivism, 5, 18–20, 38–9, 41, 124, 135, 151–3, 181, 288
Collins, B. S., 15
Collins, J., 228
Colombia, 199
colonization, 136–8
color, 344
Columbia Journalism Review, 45
commodification, 84–5, 87, 123–4, 131, 134, 143
commons-based models, 5, 51, 71–2, 132, 135–6, 141, 143, 145, 185, 191, 366–7
Commons, J., 288
community engagement, 4, 51, 296
conceptual mapping, 283–5
concursivity, 92–4
connectivity, 289, 306, 308, 331, 342–6, 348
Connell, R.W., 299
Connexions, 72, 312
consumption, 123–4
contestation, 19–20, 132
contextualization, 142–3
continuous revision, 66, 157
Contractor, N. S., 14
control, 70–1, 85, 88–90, 93–4, 108–9, 138–9, 285–6, 315, 342, 349, 353–4
convergence, 4, 39–41, 109, 112, 123–4, 181, 219, 231, 286, 347, 366
copyleft, 132, 145, 185–7, 191, 366–7
copyright, 145, 157, 162, 313, 341–2
Cornia, G. A., 307
corporate interests, 308–9, 312–14, 316
Corrigan, V., 178
Corrocher, N., 330
Corwin, L. A., 328
Coser, L. A., 61
Couldry, N., 99
Crang, M., 87
Creative Commons, 51, 71–2, 145, 185, 191, 366–7
creativity, 137, 230, 241
crisis theory, 141
Cross, M., 312
crowdsourcing, 231–5
Cubitt, S., 6, 224
Cullen, R., 306
cultural contexts, 6–7
cultural diversity, 21, 272–6
cultural icons, 138
cultural recognition, 131–2, 143
cultural studies, 279–80
Cunningham, D., 286
Curien, N., 14
Curran, J., 99
customer service, 245–6
cyber capitalism, 327–9
cyberspacing, 264–5
Czarina, A., 250

Dagan, H., 135
Dahlberg, L., 20
Dahlgren, P., 20, 99
Dandeker, C., 110
D'Andrea, V., 255
Darbishire, O., 6
data networks, 285–7
data protection regimes, 118
dataveillance, 112–13
Davis, C. M., 315
Davis, R., 29
decentralization, 138–9, 230, 238–9
de-gendering, 299–300
Deibert, R. J., 90
De Kerckhove, D., 90
Deleuze, G., 108, 210
Delicious, 184

PROOF

democratization, 195–7, 229–30, 232, 237–8, 270, 316
deregulation, 286–8, 308
Dertouzos, M., 83
Descartes, René, 167
design templates, 339–40, 344–7, 349–50
development, 7, 99–100, 308–20, 324–5
  see also digital divide
Dickson, D., 239
DiFazio, W., 239
diffusion theory, 14, 17
digital art, 166–7, 220–2, 273
digital culture, 270–1
digital discourse, 229–38, 240–1, 306
digital divide, 175–6, 270–1, 296, 305–8, 324–5, 330–2 *see also* inequalities
digital documents, 340–2
digital heritage, 273
digital labor, 6, 227–42, 245
  ICT graduates, 250–1
  knowledge workers, 140–1
  telecommunications, 245–6
  unpaid/underpaid labor, 231–4, 236–7
  US policy, 247–8
digital literacies, 20, 318, 331
digital novels, 7, 359–61
Digital Opportunity Index, 332
digital readers, 339–45, 348–9
digital repositories, 189–92
digital rights management, 354, 356–7
disability, 102–3
discourse analysis, 228, 239–40
discursivity, 92–4, 219–20, 228, 232, 294
Dobransky, K., 103
document-reading devices, 342–4, 348
dot.com marriages, 7, 327–9
Downey, G., 264, 266
Downing, J. D. H., 99
Drahos, P., 311
Drake, W., 26
drinking water systems, 195–7
Drishtee, 317–18
Drucker, P., 265
Dumont, L., 328
DuPont, 199
Dyer-Witheford, N., 140–1
Dyson, F., 207

e-book market, 69–73, 75, 352–4
e-book readers, 7, 337–50, 352–61, 367
eco-feminist perspectives, 136–7
economic factors, 14–15, 63–71, 73, 89–91, 131–2, 231, 306, 311, 316, 324, 331, 357
The Economist, 46
Edge, D., 238
editing, 38, 168
education, 61–73, 167–8, 177–8, 251, 255–6, 274–5, 307, 310, 317, 324, 328, 331 *see also* learning
Egan, J., 14
Egypt, 4, 97–8
Ehn, P., 262
e-incunabula, 78–9
E Ink, 339, 341
Eisenstein, E., 337
Elbaradai, M., 98
electronic frames, 343
Elesh, D., 20
Elias, C., 4
Ellul, J., 111
emancipation, 6, 93, 95, 133, 228–31, 234, 241, 284
employability, 250–1
empowerment, 20, 124, 227, 232, 238
end-user-driven approaches, 195–7
English-Lueck, J., 264
Enlightenment culture, 208, 284–5, 287, 290, 310
e-participation, 29–31
Epstein, J., 61
Ericson, R., 108, 126
Escobar, A., 264
essentialism, 279–83, 285, 288, 290–1, 300
ethical issues, 5, 123–4, 145–6, 240, 272, 288–90
Ethiopia, 312
ethnocentricity, 274
ethnography, 264–6
European Union, 148, 187–9, 285, 298
everyday practices/strategies, 18–19
exceptionalism, informational, 134–6

PROOF

exclusion, 109, 195, 270, 324, 330
expert systems, 265
exploitation, 140–1
Extreme Programming, 263

fabrication, 6, 207–17
Facebook, 4, 50, 53, 56, 91, 93, 97–9
faces, images of, 126–7
Fairclough, N., 228
Fairlie, R. W., 175
Fallis, D., 168
Family Fun, 46
Farahbakhsh, K., 6, 196
Faris, D. M., 97
Faulkner, W., 300
FCC, 285–6
Feely, M., 117
Feenberg, A., 238–9
Feltrero, R., 5, 145–6
feminist constructivism, 299–300
Fenton, N., 99
Ferenbok, J., 5
Fermat's Last Theorem, 201–3
field model, 62
film industry/filmmaking, 50–1, 149
Financial Times, 43–4
First Nations communities, 195–7
Fisher, E., 6, 242
Fishwick, P. A., 207
flattening of hierarchies, 38
Flat World Knowledge, 71–2
Flaxton, T., 213
FlexBook, 72
flexibility, 234–7, 240–1, 308
Flickr, 56, 184
Floridi, L., 146
FLOSS, 145–6, 186–7, 215, 262–4, 319–20
Flusser, V., 213–14
Flyverbom, M., 5, 149
Fogel, K., 263
folksonomies, 183–4
Fordism, 231, 239–41
Fors, M., 305, 310
Forsythe, D. E., 264–6
Fossum, E. R., 212
Foucault, M., 85, 95, 108–9, 122, 208, 210, 281–4, 289
Fox, J., 258
fragmentation, 99, 283, 289, 349
Frank, E., 71–3
Frankfurt School, 239, 270
Fraser, N., 132, 142–3
free content/software movement, 4–5, 73, 132, 140–1, 145, 157–69, 186–7, 287, 350
freedom of choice, 47–8, 281, 283
freedoms, 142, 146, 286–8, 332
free trade, 133–4
Frenkel, K. A., 298
Friedmann, B., 127
Friedman, T., 306–7
Friedman, T. L., 307
Fromm, E., 239
Fuchs, C., 175, 214, 279
Fujimura, J. H., 266
functional diversity, 5, 102–3
function-art dynamic, 223–4
Fusco, C., 216

Galileo, 160–1
Galison, P., 267
Galla, A., 6–7
Galloway, A., 138–9
Galpin, V., 299
game consoles, 342, 345, 349
gaming, 177–8, 359–60
Gandy Jr., O. H., 19, 117
Gane, N., 112
Gantz, J., 216
Garfield, E., 182–3
Garnham, N., 15
Garsten, C., 264
Gates, B., 230
Gee, J. P., 178
Gelernter, D., 207
gender issues, 7, 246, 279–91, 298–300, 328–9, 331, 367–8
Genosco, G., 112
George-Palilonis, J. A., 4
Gera Roy, A., 6
Gherab-Martín, K., 5–6, 353
Gibson, D., 178
Giddens, A., 262
Gieryn, T., 259
gift economies, 139–40, 143
Gilbert, T., 6
Ginsparg, P., 202
Gipuzkoa, 29–31
Girard, B., 148

PROOF

GIS, 210–11
Gist, N. P., 327
globalization, 99–100, 131, 133, 136, 143, 265, 270–2, 308–9, 311, 314–15, 320, 366
global politics, 148–50
Goetz, T., 230–1
Gogging, G., 27
Goldsmith, J., 136
González-Quirós, J. L., 7, 353
González Villa, M., 6
good-enough aesthetic, 211
Google, 38, 46, 75, 182, 216, 348, 350
Google Scholar, 190
Gore, A., 247–8
Gorman, M., 75
Gottlieb, P., 160
governance, 5, 26–7, 84–9, 109, 139, 148–50, 198, 247–8, 317
governmentality, 109–10
GPS, 223–4
graduate job market, 250–1
Grameenphone, 318, 331
grassroots politics, 4, 99–100
Greaves, T., 138
Greenbaum, J., 232, 240
Green, E. W., 173
Greenpeace, 198–9
Greif, A., 288
Griggs, B., 53
Grizedale Arts, 219–20
groupware failure, 259
Gruber, D., 201–2
Grudin, J., 259–60
Guédon, J.-C., 7, 189
Guild, E., 109
Guillén, M. F., 175
Gupta, S., 317–18
Gürer, D., 298
Gurstein, M., 313

Habermas, J., 239–40
hacking, 139–40, 146
Hafeel, A., 152
Hafez, K., 27
Haggerty, K., 108, 126
Hakken, D., 6, 258, 264–5
Hall, W., 90
Hand, M., 316
Hannerz, U., 265
Hansen, J. E., 43
Håpnes, T., 300
Happy Stacking project, 220
Haraway, D., 264
Harding, S., 298–9
Hardt, M., 94
Hargittai, E., 20, 103
Harnad, S., 168, 190
Hartley, T., 280
Harvey, D., 239, 241
Harvey, L., 250
Hayles, K. N., 91
health issues, 5, 151–3, 195–7, 324
Hedley, R. A., 316
Hedman, E., 42
Heffernan, N., 239
hegemony, 94, 100, 110, 241, 285, 299, 309–10, 316
Heidegger, M., 208
Heilbroner, R. L., 365
Heim, M., 91
Heisenberg, W., 212
Heller, M., 135
Helmreich, S., 264, 266
Henwood, F., 298
Herf, J., 239
heritage, 272–3
Hess, D., 264
higher education, 61–70, 177–8
Hillesund, T., 75
historical mapping, 172–3
historical materialism, 140–1
historical perspectives, 207–8
Hitchens, C., 47
Hjorth, L., 124
Hobsbawm, E., 284
Hochschild, A. R., 328
Hodder, I., 173
Hoenig, H., 103
Honneth, A., 143
Hooper-Greenhill, E., 56–7
Horkheimer, M., 239
Howe, J., 231–3, 235–7
Hubble Space Telescope, 212
Hudson, A., 220
humanism, 241
Huws, U., 232, 239
Hyder, S., 315
hyperlinks, 157–60, 182, 366
hypertextuality, 27

PROOF

Ibrahim, Y., 4–5
ICT4D *see* development
ICT graduates, 250–1
identification, 5, 111, 126–7
identities, 7, 18, 102–3, 279–91, 293–4, 298–300, 328, 368
identity theft, 19, 113, 127
Ignacio, D., 39–40
Inanimate Alice, 359–61
inclusivity, 57, 175–6, 195–7, 272, 299–300
India, 5, 7, 149, 151–3, 172–3, 216, 270–1, 306–7, 317–18, 327–9
indigenous communities, 7, 137, 143, 151–3, 195–7, 296–7
individualism, 5, 18–20, 287–8, 311
Indonesia, 317, 319
inequalities, 15–17, 20, 85, 89, 91, 102–3, 109, 143, 195, 311, 314–16, 318
  see also digital divide
information literacy, 5, 177–8
information markets, 14–15
information materialism, 140–1
information production, 20–1
Ingelfinger, F. J., 191
Innis, H. A., 238
InnoCentive, 233–6
innovation processes, 16–17
Institut de Nouveau Monde, 50–1
instrumental approach, 316
intellectual property rights, 5, 15, 131–43, 145–6, 148–53, 186, 311, 315, 319–20
interactivity, 27, 83, 177–8, 342, 353, 359–61
interconnectedness, 7, 289
International Congress of Mathematics, 201–2
international relations, 274–6
International Space Station, 43
Internet cafés, 324
intertextuality, 80
Introna, L. D., 127
iPad, 7, 338, 341, 345–7, 349–50
iPhones, 6, 127, 223–4, 349, 360
iPod, 46, 343
IPTV, 38
Iran, 91
Iraq War, 45, 163
Italy, 255
Ito, M., 264
Ito, Y., 14
Ivanyukovich, G. R., 263

Jackson, A., 201
Jackson, P., 229
Japan, 114, 126, 220, 311, 320
Jarvis, J., 45
Jaschik, S., 73
Jefferson, B., 5
Jefferson, T., 135
Jenkins, H., 39–41, 219
Jepsen, M. L., 350
Jessop, R., 240
Jindal, B., 163–4
John, C. G., 178
Johnson, D. G., 146
Joseph, C., 359
Joshi, Y. V., 14
journalism, 4, 37–48
Jules-Rosette, B., 264
Jung, J., 20
just-in-time production, 239
Juul, J., 177

K-12 market, 71–2
Kalia, M., 7
Kaminska, I., 43–4
Kamiya, G., 44, 48
Katz, J., 330
Kelly, B., 6, 196
Kelly, K., 93, 229, 237
Kensing, F., 263
Kenya, 318
Kerala, 151–3
Khaled, M., 97
Khosla, N., 72–3
Kincheloe, J., 228
Kindle, 338, 342, 345, 349, 355
Kirriemuir, J., 178
Kleiner, B., 203
Klopfer, E., 178
Knight, P., 250
Knorr-Cetina, K., 216
knowledge, 90, 94, 167–8, 265, 366
  communities, 6, 131–2, 198–9
  local, 151–3, 195–7
  production, 4–5, 132, 134–5, 146, 181, 220, 229, 330
  sharing, 38, 41, 56–7

PROOF

knowledge workers, 140–1
Knuth, D. E., 189
Koerner, B. I., 233–5, 237
Koomey, J. G., 216
Kruchten, P., 262
Kuhn, T., 266
Kumaran, T. V., 151
Kuper, A., 228
Kuper, J., 228
Kuwait, 331–2

labor practices *see* digital labor
Laccetti, J., 360
Lace, S., 116
Lagesen, V., 299
Lanham, R., 45
Lanier, J., 281
Lash, S., 116
Latour, B., 256, 316
Lawrence, J., 123
learning, 4, 7, 32–3, 45, 56–7
  see also education
Lefebvre, H., 83–6
legal citations, 182–3
legislation, 126, 247–8, 285–6
legitimation, 228, 239–40
Lego, 233–4
Le Guyader, H., 13
Le Monde Diplomatique, 47
Léon, O., 317
Lessig, L., 15, 110, 134–5, 146, 148, 287
Levine, A., 360
Levine, R., 4
Lévi, P., 41
Lewin, T., 61
liberalism, 284, 289
libraries, 75, 78
Library of Congress, 53
Lichtig, T., 76
Lievrouw, L. A., 20
Lindlof, T. R., 264
Linux, 215, 319
Lipovetsky, G., 37
Lipscome, A., 135
Lisberg, A., 121
litigation, 286–7
"Living Stories" project, 46
Llamazares, G., 39–40
Lloyd, M., 126
Lobato, M., 102
local knowledge, 151–3, 195–7
lock in, 281, 283, 345, 349
Lohan, M., 300
Lokhorst, G.-J., 167
Long, E., 76
Lorber, J., 299
Lott, J., 203
Lovink, G., 317, 319
Lozano, J., 39
Lüdert, J., 7
Luke, T. W., 4, 86–8, 92–4
Lutz, C., 228
Luyt, B., 306–7, 313
Lyon, D., 5, 20, 109, 114
Lyotard, J.-F., 89–90, 93–4

McCahill, M., 111
McChesney, R., 15, 99, 286
McGonigal, J., 39
Machiavelli, 165–6
Machlup, F. B., 14
McIntre, Alison, 164
McLaren, P., 228
McLaughlin, L., 306
McLuhan, M., 238, 270
McNealy, Scott, 114
magazines, 46–7
Magnette, P., 29
Make History project, 57
Malawi, 7, 324–5
Malaysia, 6, 250–1
Malik, 163
manipulation of documents, 345–8, 350, 356
Mannesmann, 312
Mansell, R., 3–4, 13, 15, 17–18, 20–1, 118, 324
Manuel, P., 270
mapping exercises, 5, 133–41, 172–3, 223–4, 367
Marcuse, H., 239
marginal groups, 6, 172–3, 270–1
market expansion, 313–14
Maron, N., 73
Marriott, M., 328
Martian probes, 41–2
Marx, G. T., 111
Marx, I., 238
Marxism, 140–1, 162–3, 166, 238–9, 365
Marx, L., 238

PROOF

Mason, G. G., 250
Mason, R., 146
mass media, 37, 42–4, 317
material/digital interactions, 8, 56–7, 84, 90–2, 132, 141, 216
mathematics, 6, 32–3, 201–3
Mattelart, A., 15
May, C., 133–4
Mayr, O., 239
McGraw-Hill, 65
mediated relationships, 16, 18–19, 90, 93, 146, 284, 337–8
Mellström, U., 299
Menou, M. J., 314
Merton, R. K., 190
Mexico, 6, 198–9
Meyer, P., 47
Microsoft, 287, 319
Middle East simulations, 274–5
Millán, J. A., 7
Miller, D., 264
Miller, F., 160
Milton-Smith, M. D., 6
mobile phones/systems, 88, 113–14, 123–4, 178, 223–4, 245, 318, 331, 345
modernity, 92, 124, 231, 239
Monahan, T., 110, 117
Monge, P. R., 14
monitor space, 288–9
monographs, 62–5, 67–9
monopolies, 139, 310, 315
Montanelli, I., 39
Moreno, A., 305, 311
Morgan, J. W., 203
Morillo-Velarde, J., 4
Moschini, E., 5, 178
Mosco, V., 15, 238–9, 286, 315
Mossberger, K., 175
Mozambique, 324
Muhamad, S., 6
Munster, A., 207
Murdoch, R., 47
Murphie, A., 221
museums, 4, 6–7, 56–7, 223–4, 272–3
music industry, 185–6
MySpace, 85, 91, 93

Nakamura, L., 280
NASA, 41–4
Nasar, S., 201–2
National Health Service, 259
national interest, 4, 6, 27, 118
National Science Foundation, 202, 260
Nederman, C., 166
Nederveen Pieterse, J., 7, 307, 314
Negri, A., 94
Negroponte, N., 90, 350
neoliberalism, 90, 99–100, 133, 239–40, 286, 310, 314, 324
network aesthetic, 215–16
network distributionism, 138–40
networking/networks, 4, 6, 18–20, 87–9, 131, 227–42, 289
New England Jounal of Medicine, 191
news, 4, 37–8, 123–4
newspapers, 46–7
New York Times, 37, 43, 46–7
Ngenda, A., 311
9/11, 39–40, 57, 109, 112, 221
Nissenbaum, H., 15, 127
Noble, D., 239
Nordenson, B., 45
Norris, C., 109, 111, 126
Norris, P., 29
Nossal, K. R., 274
Nye, D., 239
Nyirenda, P. B., 324
NYPD, 5, 121–2

Obama, B., 4, 38, 53–4
O'Hara, K., 90
O'Harrow, R., 114
Okpaku, J., 324
OLPC project, 319, 350
Ong, W., 238
open access model, 4, 71–3, 132, 157–69, 187, 189–90, 192
openness, 345–6, 348, 350, 367
open reuse, 6, 181, 185–9, 191–2
open source movement, 5–6, 132, 145–6, 181, 187, 229–30, 315, 319
open source software, 51, 145–6, 175–6, 186–7, 215, 262–4, 319–20
operationality, 90–5
Ordanini, A., 330
O'Reilly, T., 38, 181, 186
Orgad, S., 15
Oswick, C., 122

PROOF

outsourcing, 231, 248, 308, 319
Oxford University Press, 64, 67

Palacios, A., 102
Palgrave Macmillan, 68
Pang, N., 76
Panopticism, 108–9, 115, 121–2
Parasher-Sen, A., 5, 172–3
Parayil, G., 311, 316
Parel, A., 166
Parole Citoyenne, 50–1
participation, 4–5, 8, 39, 41, 135–6, 143, 175–6, 229
Participatory Design, 263–4
passivity, 27, 38, 41, 48, 84, 229, 349
Pastoureau, M., 208
patents, 131, 133–4, 136, 151, 183, 311, 320
Patston, P., 102
Patterson, T., 123
Peachey, A., 178
Pearl, A., 298
Pearson and Thomson, 65
peer reviews, 72, 79, 157–8, 189
peer-to-peer production, 5, 135, 143, 145, 229
Pegler-Gordon, B., 126
Perelman, G., 201–3
performativity, 94, 299
Perry, J., 89, 157, 287
personal data traffic, 107–8, 112–14
personal web diaries, 7, 293–4
Peters, J. D., 279
Pfaffenberger, B., 264
Philoponus, J., 160–1
philosophy, 16, 157–69
phishing, 289–90
phones/phone networks, 6, 127, 223–4, 312, 318, 331, 343, 349, 357, 360
photography, 208–10, 212–14
Pippin, R., 239
Pixel Xi, 347, 350
Placencia-Porrero, I., 102
Plant, S., 215
Plummer, K., 294
Poincaré Conjecture, 201–3
policies, development, 316–20
policies, labor, 247–8
policing strategies, 121–2, 126
political activism/participation, 4–5, 29–31, 84, 90, 99–100, 198–9
political communication, 4, 7, 39, 53–4, 83, 86–8, 93–4, 97–8, 296
political contexts, 13–21, 26–7
pop ups, 289–90
Porat, M. U., 14
pornography, 7, 281–91
portability, 345–6, 350
postcolonialism, 272–3
Poster, M., 270
Postman, N., 238
Potts, J., 221
power, 5, 13–21, 107–18, 139
Prensky, M., 177–8
Pressman, J., 360
print on demand, 71, 73
privacy issues, 114–15, 290, 368
privately reflexive systems, 328–9
privatization, 134, 143, 236, 240–1, 285, 324
problems in computing, 256–60
Proctor & Gamble, 235
professionalism, 44–5
proletarianization, 279, 284–5, 287, 289–91
prosumption, 6, 181, 227, 229, 232, 241, 367
protectionism, informational, 133–4
public interest, 286–7
public-private partnerships, 313–15
public/private spaces, 293–4
public sector information, 187–8
publishing, 4, 7, 32, 75, 201–3, 352–3
  academic, 61–70, 182, 186, 189–90, 201–3; textbooks, 4, 61–2, 65–9, 71–3
  see also book market; e-book readers
Pullinger, K., 359–60

Rab, A., 18
Rabinbach, A., 239
race issues, 115, 280
Radway, J., 289
Raphael, 208
Rashid, S. M., 331
rationality, 228–31, 239
rationalization, 230–1
Rational Unified Process, 262–3
reading machines, 7, 337–50, 352–61, 367

PROOF

realism, 208, 210–11, 214
recommendation technologies, 181–5, 190–2
Reddy, E. S. N., 172
redistribution, 136, 143
Red One camera, 212–13
referencing, 160–1, 177–8
Regan, P., 115
regulation, 283–8, 290, 309
representation, 29, 207–9
research and development, 134, 233–5
reuse, 6, 181, 185–9, 191–2, 366–7
Reuters, 39
Rheingold, H., 38, 76
rhetoric, 53–4
Rice, R., 330
Ring of Steel approach, 121–2
risk management, 195–7
Ritterfeld, U., 178
Robins, K., 238, 240
Rodríguez, C., 99
Rogers, E. M., 14
Roland, N., 259
Romañach, J., 102
Rose, N., 109
Rosenzweig, R., 39–40
Rossiter, N., 281
Routledge, 68
Royal, S., 39
Royal Society, 44
Royce, W., 262
Rubin, M. R., 14
Rubio, J. E., 6
rural contexts, 5, 7, 152, 175–6, 270–1, 296–7, 317–18, 331
Russett, B., 247

Sachs, J., 330
Said, E., 283
Sandywell, B., 316
Sanz, V., 7, 298
Sarkozy, N., 39
Sassen, S., 222
Schiffrin, A., 61, 64
Schiller, D., 15, 312, 314–15
Schumpeter, J., 313
Schwartz, B., 48
Schwartzberg, J. E., 172
Schweibenz, W., 56
Science 2.0 project, 181–92
scientific journals, 63, 79, 189–92, 198
scientific knowledge, 5–6, 32–3, 41–4, 78–80, 137, 183, 195–9, 201–3, 256
Scoble, R., 53
Scott, J., 228
screens, 344, 346–7, 349–50
Second Life, 39, 91, 93, 220, 368
Secrets of Biblioland, 177–8
securitization, 308–9
security initiatives, 121–2
Sen, A., 102–3
Sennet, R., 232, 234, 240
Serroy, J., 37
service oriented systems, 88, 263, 266
Sesame Street, 39–40
Seven Samurai project, 220
sexualities, 7, 281–91, 293–4
Shadbolt, N., 91
Shade, L. R., 306, 310
Shankar, D., 152
Shannon, C. E., 214
Shapiro, S. M., 97–8
Sheller, M., 280
Shepard's Citations, 182
Shirky, C., 262
Shiva, V., 136–8, 367–8
Shoba, N. Š., 221–2
shopping online, 113, 324, 346
Silverman, E., 121
Silverstone, R., 13, 17–18, 118
Simard, C., 298
Simon, J., 117
Sims, M., 307
simulation, 215, 222
Siochrú, S. Ó., 148
Šisler, V., 281
skill shortages, 250–1, 331
Sklair, L., 239
Slack, J. D., 281
Slater, D., 264
Slevin, J., 15
Smart, J. J. C., 161–2
smartphones, 343, 357
Smith, J., 103
Smith, M., 238
Snyder, J., 126
social agents, 198–9
social change, 6–7, 13–21, 227, 237, 239, 241, 265, 365
social justice, 132, 134, 138, 140–3

PROOF

social movements, 99–100, 110, 317
social networking, 4, 41, 75–6, 91, 93, 99
social participation, 131–2
social sorting, 109, 112, 115–18
social tagging, 183–4
software piracy, 313, 315
Sørenson, K., 298, 300
Sorj, B., 317
South Africa, 312
South Korea, 319
space and action, 83–5
Spain, 7, 29–31, 39–40, 43–4, 102–3, 188, 352–8
spatial practices, 83–7, 103
specialization, 45–8
Spivak, G. C., 280
SREC, 255–7, 266–7
Srinivas, M. N., 328
Stake, R., 228
Stalder, F., 115
Stallabrass, J., 221
Stallman, R. M., 187, 263
Stanford Encyclopedia of Philosophy, 157–69
Stanislaw, J., 239
Stansbury, M., 312
Star, S., 115
Steeves, V., 113, 115
Steinmueller, W. E., 15
Stern, H., 286
Stevenson, N., 229
Stiglitz, J., 47, 310
Stoker, G., 26
Stover, W. J., 7, 274–5
Strange, S., 314
Sturken, M., 239
Suárez, F. L., 175
Subbarao, B., 172
Suchman, L., 262, 265
Sugar, D., 319
Sullivan, A., 47
Sunstein, C. R., 18, 30, 168
Surowiecki, J., 18
surveillance, 5, 19, 107–18, 121–4, 315
sustainability, 250–1, 318, 324
Sutherland, A., 220
Swain, J., 103
Syngenta, 199
systemic failure, 258–61
tablets, 347, 349, 357
tagging, 183–5
Tagg, J., 126
Taiwan, 319
Talbot, K., 100
Taleb, N., 258
Tandon, A., 315, 319
Tawileh, A., 5
Taylor, B. C., 264
technicality, 258, 262
technicians, 245–6
technological determinism, 8, 111–12, 140, 238, 240, 265, 314, 365
technosocial approaches, 6, 255–67
Telangana, 172–3
telecommunications industry, 6, 245–6
television, 27, 37–42, 48, 75–6, 219, 223, 270, 285, 296, 342–3
  and development, 305, 314, 317
Teli, M., 6
temporalities, 4, 79, 231–2
terra nullius approach, 136–8
Terzi, L., 103
textbooks, 4, 61–2, 65–9, 71–3
This American Life, 45
Thomas, D., 239
Thompson, J. B., 4, 61, 75
Thompson, M., 306, 310
Thompson, S., 4
Thrift, N., 87
Tian, G., 203
Times Square reconstruction, 221–2
Toboso, M., 4–5
Toffler, A., 37, 181, 229, 237, 367
Tofts, D., 221
Torvalds, L., 261, 263
Tovey, M., 18
trade publishing, 64–5
traditional journalism, 44–7
traditional medicine, 151–3
transcendental knowledge, 256
transferable skills, 250–1
Tranter, P., 250
Traweek, S., 266
TRIPS, 131, 133–4, 142, 320
Tsagarousianou, R., 29
Tsing, A., 313
Turkle, S., 264

PROOF

Turner, W., 160
Twitter, 4, 53–4, 83, 343

Uldam, J., 4
Unceta, A., 4
understanding, 337, 348
United Kingdom, 6, 44, 62–4, 68–9, 99–100, 109–11, 126, 178, 219–20, 245–6, 288
United Nations, 126, 148–50, 285
university presses, 61–5, 67–9
unpaid/underpaid labor, 231–4, 236–7
Unwin, T., 324
urban contexts, 5, 175–6, 271
Urry, J., 280
used-book market, 66
users and design, 338–9, 341
UsMob website, 7, 296–7
utopianism, 313–14, 316

Vadiveloo, D., 296
validation of science, 6, 79
Van den Bulte, C., 14
van Dijk, J. A. G. M., 15, 175
van Eck, R., 178
van Oost, E., 300
vectoralist class, 139
Verzola, R., 310
Village Voice project, 7, 331
Virilio, P., 86, 93
virtual communities/realities, 76, 83, 89–90, 92, 94, 274–6
visual media/culture, 32–3, 50, 56, 108, 173, 208, 210, 214, 289

Wade, R. H., 306–9, 311, 317–19
Wajcman, J., 239
Wall Street Journal, 46–7
Walton, K., 167
Wark, M., 138–9
Warn, J., 250
Warren, J. W., 4, 7, 359–60
Warren, M., 29
Warschauer, M., 306, 314
Waterfall model, 262–3
Weaver, W., 214
Web 2.0 technologies, 4–6, 38, 41, 50, 56–7, 181, 360
Weber, M., 234
Weber, S., 135, 319
website traffic, 41–2, 91, 164–7
Webster, F., 15, 238, 240, 261
Weerasinghe, S., 317
Wehn, U., 20, 324
Weiss, P. N., 188
welfare state, 231, 239–40
Wellman, B., 76
Wendt, A., 274
Westin, A., 114–15
Wheeler, D., 330
Wicks, D. A., 312
Wiener, N., 261
Wiezenbaum, J., 261
Wi-Fi, 342–3
Wikipedia, 30, 38, 40, 132, 157–69, 215, 229, 233
Wildberg, C., 160–1
Wiles, A., 201–3
Williamson, B., 20
Williams, R., 238
Willinsky, J., 5, 146, 168
Wilson, C., 4
Wilson, E., 26, 324
Winner, L., 111, 238, 265
Winograd, T., 262
WIPO, 148, 306, 311
Wired, 228, 231–2, 237
wireless networks, 175–6
Wise, J. M., 281
Wittgenstein, L., 162, 365
Wolff, J., 163
Wolfson, T., 327
Women into IT approach, 298
Wong, P. K., 311–12
Wood, D., 127
Woolgar, S., 256
workflow management, 215
World Bank, 306, 310, 314
World Development Movement, 99–100
World Summit on the Information Society, 26–7, 148–50
World Trade Organization, 131, 133, 148, 285, 306
Wu, T., 136
Wuthnow, R., 112

XML documents, 350

Yates, D., 5, 175
Ya'u, Y. Z., 306, 309–11

PROOF

Yergin, D., 239
Yorke, M., 250
Young, J. R., 72, 169
YouTube, 4, 38, 50, 91, 93, 99–100, 184, 290
Yudice, G., 219
Zalta, E. N., 157–8
Zelizer, B., 124
Zhao, S., 20
Zhu, X. P., 203
Zimmerman, D., 164
Zorn, I., 298