Regulating Code: Good Governance and Better Regulation in the Information Age, by Ian Brown and Christopher Marsden. Cambridge, Mass.: MIT Press, 2013. ISBN: 978-0262018821

Kirsten Martin, George Washington University

The governance of technology has plagued big thinkers for centuries—from the seemingly arcane invention of the bicycle and the light bulb to the clearly complicated development of the Manhattan project and military weapons. In *Regulating Code: Good Governance and Better Regulation in the Information Age*, Ian Brown and Christopher Marsden tackle the governance of Internet technology and examine how technologies interact with regulation, broadly construed, in order to identify "more economically effective and socially just regulation."

The short title, *Regulating Code*, belies a meaningful shift in analyzing technology. To the authors, code means more than mere software or algorithms. Instead, the term code refers to both the technical environment and the layers of technologies that form the foundation of the Internet. Similarly, regulation is used in a wide sense as that which guides or directs actions, whether exercised through code, government, self-regulatory standards, or private actors' commercial imperatives. Taken together, the book's substantial scope encompasses the "examination of regulatory and governance mechanisms" by public and private actors "that have enabled the production of public goods" (164).

To further increase the complexity of the task, the authors tackle five 'hard cases': privacy and data protection, copyright, censorship, social networking services, and net neutrality. The rationale for the hard cases is best explained at the end of the book. These cases exemplify "where self-regulation has had a limited effect in producing key public goods" (p. 163). Firms and regulators attempting to govern technology face both the unanticipated consequences of regulations as well as the challenge that different actors inconsistently adopt new or emerging technology. Such difficulties lead some to claim that technology rests outside the realm of effective regulation or governance. Brown and Marsden therefore attempt to move past the issue of *if* Internet technology should be governed to *how* states and firms can effectively govern Internet technology should they decide to embrace the task.

Chapters 1 and 2 begin by laying out the authors' theoretical approach for the hard cases that then follow in chapters 3 through 7. The Internet is framed by the authors as a special innovation with greater societal significance thereby making policy more important and requiring analysis that transcends just one discipline (computer science, law, economics), one industry (telecommunications), or one governance solution (self-regulation versus governmental oversight).

For each hard case, the authors examine: (1) the key stakeholders; (2) the ways that solutions to these hard cases have source, process, or outcome legitimacy; and (3) the effectiveness of the current and developing regulatory solutions. The authors seek to achieve their goals by assessing the policy environment, the types of technologies, existing regulations, the key actors in the policy debate, and the

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current outcomes assessed according to the "transparency of outcomes, enforcement of regulatory goals, interoperability as a solution, and efficiency" (44). They offer a balanced analysis throughout the book without prioritizing one actor or approach over all others. Most importantly, for a public policy analysis, the authors take the approach that the "public interest is not always well represented by the government or corporate interests" (p. xvi), while avoiding "government-bashing libertarianism." The authors consistently attempt to move from "sledgehammer prohibition-based, enforcement-oriented regulation, to smarter regulation that works technically, with some degree of outcome legitimacy in terms of goals."

Within their analysis, the authors' public policy discussion seamlessly integrates a consideration of both human rights and economics. They identify and embrace different objectives in public policy that balances the solutions offered within the hard cases. Inside each "hard case" the authors also place the Internet in perspective with a history of the social impacts, market failures, and fundamental rights at issue, thereby situating each Internet technology as part of an existing conversation. At the same time, the current problems with Internet technologies are put into perspective, as can be seen in the example of how concerns about privacy date back to the emergence of cameras and copyright issues arose with audio tape recorders and the VCR.

The broad insights of Brown and Marsden's analysis deserve comparison to discussions taking place within science and technology studies and actor-network theory regarding the interdependent relationship between technology and society. *Regulating Code* places each technology in context to understand how regulations and technology shape each other. The title of the book itself suggests this overarching theme in that the regulation of technology can be understood in two different ways. First, technology can guide the beliefs and behaviors of individuals where "code is no more neutral than regulation" (xix). Here "regulating" code, as an adjective, is code that shapes the possibilities of other actors and must be analyzed and designed in much the same way that some would assess the law and public policy. The authors make it clear they are not advocating for technological determinism, but are rather allowing for the technology to shape the actions of others. Internet code is viewed as layered, influencing not only other technology and actors on the same plane, but also influencing each layer above. The content we read is likened to the tip of an iceberg with "rules written into the entirety of the protocol layers" below the surface. As noted by Brown and Marsden, one cannot expect changes in automobile drivers' behavior without support of manufacturers, transport planners, suppliers, pedestrians, bicyclists, environmental groups, and so on. All of these actors are interconnected and build upon one another.

Brown and Marsden push this idea to its logical conclusion by placing responsibility for developing this regulating code on firms. One is reminded here of philosopher Richard Rudner, who effectively argued that scientists, in performing the tasks core to being a scientist, make value judgments. According to Brown and Marsden, firms, engineers, and computer scientists also make value judgments when developing code that regulates and shapes others. These technologies are value-laden by constraining and facilitating behaviors of users and stakeholders. Brown and Marsden rightly highlight the obligation of firms over their technology,

such as manufacturers who sell to repressive regimes only to have the technology used for questionable purposes, e.g., Cisco Systems routers used by the Chinese government in order to spy on dissidents.

Second, the authors note that both public and private actors regulate code and thereby offer two tactics for shaping or "regulating" code, as a verb. In drawing a parallel between the two options—public policy through state-led regulation and through private firms designing norms into code—the authors change the way in which the reader thinks, approaches, and assesses private and public regulation of behavior. For Brown and Marsden, the shaping of behavior by code, including the protocol layers of the Internet, is on par with the regulation established by governments. The approach illustrates the power of language as the reader begins to wonder why more attention is not paid to these private regulators.

Their approach, however, can be taken too far as when they see no meaningful distinctions between state and private firm governance decisions. When likening firms censoring user behavior to governments' regulations around general censorship (162), the authors ignore the coercive powers unique to the state (Nozick 1974). That being said, too few scholars acknowledge the morally important decisions firms make in designing code and the associated responsibility of firms to monitor the technology's regulating behavior once deployed. Brown and Marsden's view of business, technology, and state as co-regulators or governors of user behavior and system norms is a welcome shift in focus.

The authors see two failures that have led to ineffective governance of Internet technology (164). On the one hand, the technical design community has failed to "account for user adoption" to create better "feedback loops" to improve system design. On the other hand, policy makers, economists and attorneys have failed to create dialogue with those that engineer Internet-related technology.

Ironically, these two failures also constitute the areas where the reader is left wanting additional analysis. First, the technology *user* is given short shrift in the authors' analysis of regulating code. Their focus stays primarily on computer scientists and policy makers without mentioning how users have developed important workarounds to put pressure on firms and states. Examples that come to mind are Napster's treatment of copyright as well as TOR, DoNotTrack.us, and other obfuscation tools with the capability of enhancing users' online privacy. The analysis in the book ignores user solutions, user outcomes, user influence, or a user point of view in the assessment of regulation or even the criteria for the assessment of regulation.

Second, the book is difficult to read in places and renders the book as less approachable to a general academic audience, let alone a non-academic audience without an engineering degree or otherwise well-versed in Internet law and public policy. The chapters can also be difficult to follow if one does not possess sufficient background in the "hard cases." One section of the book, "Types of Code Regulation," includes misleading disjointed subheadings referring to behavioral advertising, privacy by design, and Internet of Things. This is confusing because they are not parallel issues—the first is a problem, the second is a solution, and the third is a recent technological concept. These would be small points if it were not a

goal of the book to provide a clear explanation of the "hard cases" and to improve the communication between regulators and engineers (201).

Regulating Code leaves one wondering about a larger discussion surrounding how to assess goals and outcomes when governing technology. For Brown and Marsden, each hard case is assessed based on criteria aimed at public policy or government regulation rather than on how the technological system works. The authors take for granted that a discussion about the utility of public policy is a valid substitute for an assessment of the Internet technology, and that the criteria for assessing the outcome is transparency, enforcement, interoperability, and efficiency. This need not be the case. For example, in the analysis of censorship, the authors acknowledge that the outcome assessment of the Internet was initially centered on an ability to survive a thermonuclear war (93). Obviously, that criterion for success is not currently being used, but the example does beg the question: what does "working" mean in these instances?

Brown and Marsden's nuanced and balanced analysis of recent hard cases of Internet technologies should provide guidance on how to assess more recent examples in privacy (e.g., big data and law enforcement requests), copyright (e.g., Megaupload), censorship (Bitcoin), social networking services (SilkRoad), and Net Neutrality. For someone interested in public policy and regulation of Internet technologies, *Regulating Code* provides a thorough approach to assessing governance from the point of view of the public good.

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On Global Justice, by Mathias Risse. Princeton, N.J.: Princeton University Press, 2012. ISBN: 978-0691142692

Florian Wettstein, University of St. Gallen

Mathias Risse's work is what it promises to be: an engaging reflection on global justice and its centuries old history of thought. It culminates in a conception of global justice—Risse calls it pluralist internationalism—which is both thoughtful and, at least in its basic tenets, plausible. Risse's book is no easy read. His reflections are dense and often complicated. The difficult structure and sub-structure of his argument does not excuse one's mind to wander; thus, prepare for frequent rereading. In short, the book requires a considerable amount of focus, time and commitment of its readers, but it is worth the investment.

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