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Virtual Heisenberg: The Limits of Virtual World Regulability

Viktor Mayer-Schönberger*

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I. Introduction

The popularity of virtual worlds is growing. Millions of people around the globe interact in these worlds every week, transact with others, and even make their living trading virtual goods.¹ As virtual worlds turn into a mainstream

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1. See Robert D. Hof, *My Virtual Life*, BUS. WK. ONLINE, May 1, 2006, http://www.businessweek.com/magazine/content/06_18/b3982001.htm (last visited Sept. 29, 2009) (discussing the immense popularity of virtual worlds and the breadth of activities carried on within them) (on file with the Washington and Lee Law Review); see also Wagner James Au, *The Top 10 Money-Making MMOs of 2008*, GIGAOM, Feb. 1, 2009, <http://gigaom.com/2009/02/01/top-10-money-making-mmoms-2008> (last visited Sept. 29, 2009) (listing the most prosperous massively multiplayer online worlds (MMOs)) (on file with the Washington and Lee Law Review). For information on the size of user populations, see, e.g., Comparison of Massively Multiplayer Online Role-Playing Games, http://en.wikipedia.org/wiki/Comparison_of_MMORPGs (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review). For an overview of the economics of the virtual world *Second Life*, see *Second Life*,

mass phenomenon, lawmakers and courts are beginning to turn their focus on them.² Increasingly, conflicts arise in these worlds among their participants that they desire to have settled in the virtual world, by the virtual world provider, or by real-world courts.³ At other times, those participating in virtual worlds so thoroughly disagree with the commercial entities that provide and manage a virtual world as to take action, individually or collectively, to change the rules that govern it.⁴ Finally, alerted by media coverage, real-world policymakers—legislators and regulatory agencies—ponder and even advocate new rules to curb behavior in virtual worlds.⁵

It is an exciting new frontier for lawyers, courts, and lawmakers, as well as legal academics, as the surge in recent law review articles demonstrates.⁶ Many

Economic Statistics, <http://secondlife.com/statistics/economy-data.php> (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review). For excellent data on the demographics of participants in virtual worlds, see Nick Yee, *The Daedalus Gateway*, http://www.nickyee.com/daedalus/gateway_demographics.html (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review); see also Viktor Mayer-Schönberger & John Crowley, *Napster's Second Life?: The Regulatory Challenges of Virtual Worlds*, 100 NW. U. L. REV. 1775, 1781–89 (2006) (chronicling the development of virtual worlds). See generally EDWARD CASTRONOVA, *SYNTHETIC WORLDS* (2005).

2. See, e.g., Stephen Musil, *California Lawmakers Consider Cyberbullying Bill*, CNET NEWS, Aug. 11, 2008, http://news.cnet.com/8301-1023_3-10015079-93.html (last visited Sept. 29, 2009) (discussing California lawmakers' attempts to curb cyberbullying) (on file with the Washington and Lee Law Review).

3. See, e.g., *Bragg v. Linden Research, Inc.*, 487 F. Supp. 2d 593, 596 (E.D. Pa. 2007) (involving a dispute between Mark Bragg, a participant in *Second Life*, who had exploited a fault in the *Second Life* system to his financial benefit, and Linden Research, the providers of *Second Life*, which in response confiscated Bragg's virtual property).

4. See, e.g., Wagner James Au, *Virtual Protest Threatens Linden's Profitability*, GIGAOM, Oct. 30, 2008, <http://gigaom.com/2008/10/30/protest-threatens-linden-labs-profitability> (last visited Sept. 29, 2009) (reporting on user protests in reaction to *Second Life*'s decision to increase user fees) (on file with the Washington and Lee Law Review). For a case of user protest that drastically changed the trajectory of a virtual world, see WAGNER JAMES AU, *THE MAKING OF SECOND LIFE* 123–39 (2008).

5. In the European context, see, e.g., Council Resolution, *On the Protection of Consumers, in Particular Young People, Through the Labeling of Certain Video Games and Computer Games According to Age Group*, 2002 O.J. (C65) 2, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:065:0002:0002:EN:PDF>; see also Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *On the Protection of Consumers, in Particular Minors, in Respect of the Use of Video Games* (Apr. 22, 2008), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0207:FIN:EN:PDF>.

6. See, e.g., Woodrow Barfield, *Intellectual Property Rights in Virtual Environments: Considering the Rights of Owners, Programmers and Virtual Avatars*, 39 AKRON L. REV. 649 (2006) (addressing legal rights in virtual worlds); Jack M. Balkin, *Virtual Liberty: Freedom to Design and Freedom to Play in Virtual Worlds*, 90 VA. L. REV. 2043 (2004) (discussing real-

of the debates of earlier internet days on the role of law in cyberspace are being replayed in the virtual world context, from the factual⁷—which real-world law applies to a particular interaction in a virtual world—to the normative⁸—whether or not virtual worlds require a new regulatory framework.

world law in virtual worlds); Mark Bartholomew, *Advertising in the Garden of Eden*, 55 BUFF. L. REV. 737 (2007) (arguing against advertising in virtual worlds); Caroline Bradley & A. Michael Froomkin, *Virtual Worlds, Real Rules*, 49 N.Y.L. SCH. L. REV. 103 (2004) (proposing the use of virtual worlds for governance); Bryan T. Camp, *The Play's the Thing: A Theory of Taxing Virtual Worlds*, 59 HASTINGS L.J. 1 (2007) (discussing taxation in the virtual world context); Joshua Fairfield, *Virtual Property*, 85 B.U. L. REV. 1047 (2005) (suggesting the use of property law in virtual contexts); F. Gregory Lastowka & Dan Hunter, *The Laws of the Virtual Worlds*, 92 CAL. L. REV. 1 (2004) [hereinafter *Laws of the Virtual Worlds*] (suggesting virtual worlds often implicate real-world issues); F. Gregory Lastowka & Dan Hunter, *Virtual Crimes*, 49 N.Y.L. SCH. L. REV. 293 (2004) (questioning if and when virtual conduct gives rise to criminal liability); Greg Lastowka, *User-Generated Content and Virtual Worlds*, 10 VAND. J. ENT. & TECH. L. 893 (2008) (commenting on the role of user-generated content and potential problems arising from its use); Leandra Lederman, "Stranger Than Fiction": *Taxing Virtual Worlds*, 82 N.Y.U. L. REV. 1620 (2007) (suggesting different types of virtual transactions merit different taxation treatment); Albert C. Lin, *Virtual Consumption: A Second Life for Earth?*, 2008 BYU L. REV. 47 (2008) (analyzing the environmental impact of virtual living); Erez Reuveni, *On Virtual Worlds: Copyright and Contract Law at the Dawn of the Virtual Age*, 82 IND. L.J. 261 (2007) (advocating for the use of copyright law in virtual worlds); Kevin Saunders, *Virtual Worlds—Real Courts*, 52 VILL. L. REV. 187 (2007) (considering the real-world law's role in the virtual context); David P. Sheldon, Comment, *Claiming Ownership, but Getting Owned: Contractual Limitations on Asserting Property Interests in Virtual Goods*, 54 UCLA L. REV. 751 (2007) (discussing the allocation of rights in virtual context and the need for legislative regulation to protect these rights); Bobby Glushko, Note, *Tales of the (Virtual) City: Governing Property Disputes in Virtual Worlds*, 22 BERKELEY TECH. L.J. 507 (2007) (discussing the problems arising from end-user license agreements in virtual worlds); Bettina Chin, Note, *Regulating Your Second Life: Defamation in Virtual Worlds*, 72 BROOK. L. REV. 1303 (2007) (advocating the introduction of self-regulatory measures); Steven J. Horowitz, Note, *Competing Lockean Claims to Virtual Property*, 20 HARV. J.L. & TECH. 443 (2007) (discussing labor-based property claims); Phillip Stoup, Note, *The Development and Failure of Social Norms in Second Life*, 58 DUKE L.J. 311 (2008) (noting the role of social norms in virtual worlds).

7. See, e.g., Bartholomew, *supra* note 6, at 738–50 (discussing advertising in virtual worlds); Camp, *supra* note 6, at 44–70 (analyzing tax issues in virtual worlds); Fairfield, *supra* note 6, at 1052–58, 1072–75 (examining the notion of virtual property, and how property laws can constrain the Internet anticommons); *Laws of the Virtual Worlds*, *supra* note 6, at 8–10 (focusing on the legal context of destruction of virtual property); Lederman, *supra* note 6, at 1641–55 (discussing the federal income tax issues in virtual worlds); Reuveni, *supra* note 6, at 270–75 (arguing that copyright law applies to creations in virtual worlds).

8. See, e.g., Balkin, *supra* note 6, at 2053–57 (discussing First Amendment consequences of real-world commodification); Bradley & Froomkin, *supra* note 6, at 103–12 (examining whether virtual worlds might be designed to test laws); *Laws of the Virtual Worlds*, *supra* note 6, at 29–50 (discussing property and governance challenges in virtual worlds); Mayer-Schönberger & Crowley, *supra* note 1 (suggesting that virtual worlds may be provided peer-to-peer if real-world regulators clamp down on virtual worlds); Chin, *supra* note 6, at 1307 (arguing that some pecuniary losses suffered in virtual worlds should be recognized by the real-

This Article does not add directly to these debates, but rather takes a look at a more foundational question: Is there a structural constraint to the extent existing real-world regulators can regulate virtual worlds effectively?

Part II of this Article looks at how the regulatory dynamic among virtual worlds shapes the regulability of virtual worlds by real-world regulators. Part III examines the possible tools real-world regulators have at their disposal to increase their regulability, and those tools' effectiveness. Part IV details the tension among two types of real-world regulators, which this Article terms "public values" and "choice" regulators, that place a structural limit on the regulability of virtual worlds, irrespective of the regulatory tools employed. This Article suggests that, given the current setup of real-world regulators, this structural limitation cannot be overcome. Hence, this Article concludes by postulating a "virtual world regulability limitation principle" similar to the Heisenberg Uncertainty Principle in Einsteinian physics.

II. *The Regulatory Dynamic of Virtual Worlds*

When we imagine the regulatory context of virtual worlds, we are tempted to picture a number of individuals who participate in a virtual world created and managed by a particular provider, who in turn is subject to real-world rules.

A virtual-world provider may shape how participants of her world behave in two distinct ways. First, a virtual-world provider combines hardware and software to a system that runs a particular world. By designing the system, the provider can permit or interdict certain user behavior. For example, Linden Lab, the provider of virtual world *Second Life*, enables (and thus permits) its users to fly—that is, to move around the world by spreading one's arms like a bird. If Linden Lab would like to stop letting users fly inworld, it could simply modify the code that runs *Second Life*. In this very direct sense, rules constraining behavior in virtual worlds are embedded in the software code that runs the world. As users have to use that code to access the world, enforcement is practically perfect. It is an extreme example of Lessig's "code is law."⁹

Second, a virtual-world provider mandates (or proscribes) user behavior through the "Terms of Service" and "End-User License Agreement" (EULA). Users have to agree to abide by both when joining the world.¹⁰ Through this

world legal system); Glushko, *supra* note 6, at 508 (suggesting that EULA and similar agreements for virtual worlds are inadequate and in need of change).

9. LAWRENCE LESSIG, CODE: AND OTHER LAWS OF CYBERSPACE 3–8 (1999).

10. See Glushko, *supra* note 6, at 515–17 (describing the role of the EULA in virtual worlds). See generally Sheldon, *supra* note 6; Horowitz, *supra* note 6.

contractual arrangement, the provider maintains the power to set rules inworld and to enforce them by threatening and implementing punishment, from point deductions and resetting transactions all the way to the ultimate penalty: Temporary or permanent banishment from the virtual world.¹¹ Relying on such contractual rules is effective as long as the potential punishment is a strong enough deterrent to affect user behavior.

In turn, a virtual world provider has to abide by the relevant legal rules in its respective jurisdiction. However, this picture of participants being regulated by a virtual-world provider who in turn has to abide by real-world rules of her jurisdiction is incomplete in at least two ways.

First, there are multiple providers of virtual worlds, not just one. These providers all aim to attract individuals to join their virtual world and keep them participating.¹² For providers, participants are the central resource. They generate revenue, whether through monthly participation fees, money paid to use virtual goods inworld—everything from swords to virtual land—or fees levied on inworld commercial transactions.¹³ Additional participants also add value to the virtual world as they represent opportunities for others to interact.¹⁴ Economists call this a network effect when participant growth pushes up network value—the sum of possible interaction opportunities—in a nonlinear fashion.¹⁵

As much as virtual worlds want users to join them, users have just as much freedom to choose among the existing worlds that vie for them. Users can shop for the cheapest world, look for the most sophisticated world, or try to find the best deal. They are free to choose, but they have much at stake: Joining a particular virtual world often entails making a significant commitment, not so much in money, but in time to that world. Regularly, many hours of inworld activity are necessary to understand the world, and to build up a social network of inworld friends to enjoy what the virtual world has to offer.

11. For a gripping early case of banishment, see JULIAN DIBBELL, *MY TINY LIFE* 18 (1998) (telling of a "rape in cyberspace" in which the perpetrator was "toaded," that is, officially deleted from the servers). For information on inworld enforcement, see also Mayer-Schönberger & Crowley, *supra* note 1, at 1797–1802, and Viktor Mayer-Schönberger, *The Shape of Governance: Analyzing the World of Internet Regulation*, 43 VA. J. INT'L L. 605, 633 (2003).

12. See Mayer-Schönberger & Crowley, *supra* note 1, at 1802–05 (detailing provider strategies to attract and retain users).

13. See *id.* at 1803–04 (noting the commercial nature of virtual worlds).

14. See *id.* (explaining that worlds with larger user population present more attractive networking opportunities for users).

15. See generally Bob Metcalfe, *There Oughta Be a Law*, N.Y. TIMES, July 15, 1996, at D7; Oz SHY, *THE ECONOMICS OF NETWORK INDUSTRIES* 3–6 (2001).

In this respect, the situation resembles the one faced by emigrants. Before users join a particular world they have considerable freedom of choice, but this freedom is saddled with the heavy burden of having to choose the right world to homestead. Once they have joined and begun to invest time and effort inworld, they are much more reluctant to leave the world and join another, as "switching-costs" would be high.

Choosing the most appropriate world to join requires one to weigh numerous factors.¹⁶ Obviously the context of the world—what it is—plays a central role, and so does its popularity. Often the more participants flock to one world, the more interesting it becomes for others to join as well. Similarly significant is what participants can do in a virtual world, that is, how open or constrained a world is.¹⁷ Relatively less important a consideration is price, as the monthly fees paid to virtual world providers tend to be modest, particularly in comparison to the significant time participants invest in recently joined virtual worlds.¹⁸

As a result, the image of many participants in one virtual world is incomplete. It omits that there is more than one virtual world, and that these worlds are locked in a competitive dynamic with each other over the primary resource of revenue and success: Participants.

Secondly, the simple image also omits that providers of these virtual worlds are not all located in the same jurisdiction. Instead they are scattered around multiple jurisdictions, each with its unique regulatory framework constraining what kind of virtual worlds can be legally provided.

As each jurisdiction offers a distinct regulatory framework—based on its societal preferences—providers of virtual worlds, much like participants in virtual worlds, face a choice; they can select the jurisdiction in which they want to be located. Real-world businesses often base their location close to a potential customer base. In contrast, virtual world providers are less pressured

16. See Mayer-Schönberger & Crowley, *supra* note 1, at 1802–03 (noting some considerations users weigh in choosing a virtual world).

17. This, for example, prompts participants in the relatively restrictive *World of Warcraft* to utilize the less constraining world *Second Life* to plan their *World of Warcraft* missions. For an account, see Regine Debatty, *Joichi Ito on World of Warcraft*, WORLDCHANGING, Jan. 5, 2007, <http://www.worldchanging.com/archives/005736.html> (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review). "Restrictive" of course is a very subjective concept; a world that is much too restrictive for one may be perfectly "free" enough for others. Also, real-world conceptions of societal constraints do not map very well onto virtual worlds, and vice versa, so it is wrong to equate a less restrictive virtual world with real-world liberal democracies.

18. See Mayer-Schönberger & Crowley, *supra* note 1, at 1802–03 (explaining that the time a user devotes to participating in the virtual world is the most valuable investment).

to locate in proximity to customers; they utilize the Internet to communicate with them. At least in principle, this gives providers more freedom to choose a suitable jurisdiction. Of course, virtual world providers also have to consider other important factors when choosing location, including the availability of human resources, capital, and infrastructure connectivity, similar to their real-world brethren.

Real-world lawmakers may be torn. On the one hand, they may want to preserve the value choices of their societies embedded in their regulatory frameworks. On the other hand, they may want to attract businesses to their jurisdiction, and thus—at least to an extent—be willing to modify their regulatory framework to look more hospitable. To what extent they are willing to adapt their laws depends in part on how deeply held and entrenched the rules are that may need to be changed, and in part on how strongly a jurisdiction desires to attract virtual world providers. Irrespective of the specifics of each case, however, the result is a dynamic of regulatory interaction among real-world regulators to attract virtual world providers to their jurisdictions, driven in significant part by the freedom of choice providers have to select a suitable jurisdiction.¹⁹

Thus, the initial image of multiple participants engaging in a specific virtual world managed by a provider in a particular jurisdiction is too simple; it fails to account for the regulatory dynamics among providers when participants choose worlds, and among real-world regulators when providers decide on the jurisdiction in which they want to be located.

19. One mode of such regulatory interaction is competition among regulators (and thus jurisdictions). However, even when regulatory competition dominates the regulatory dynamic between jurisdictions, a ratcheting down of regulatory frameworks (regulatory "race to the bottom") does not necessarily ensue. On modes of regulatory interaction, see David Lazer, *Regulatory Interdependence and International Governance*, 8 J. EUR. PUB. POL'Y 474, 478 (2001), David Lazer, *Global and Domestic Governance: Modes of Interdependence in Regulatory Policymaking*, 12 EURO. L.J. 455, 457–66 (2006), and David Lazer & Viktor Mayer-Schönberger, *Governing Networks: Telecommunications Deregulation in Europe and the United States*, 27 BROOK. J. INT'L L. 819, 826–38 (2002). On regulatory "races to the bottom," compare William L. Cary, *Federalism and Corporate Law: Reflections Upon Delaware*, 83 YALE L.J. 663, 663–65 (1974) (suggesting that regulatory competition has led to a deterioration of regulatory standards), with Mark J. Roe, *Delaware's Competition*, 117 HARV. L. REV. 588, 594–96 (2003) (arguing that Delaware is attractive not because of a lenient regulatory framework but an efficient and knowledgeable judiciary). See also DAVID VOGEL, *TRADING UP: CONSUMER AND ENVIRONMENTAL REGULATION IN A GLOBAL ECONOMY* 248, 259–60 (1995) (describing the "California Effect," a theory that regulatory enactment is enabled by free market forces); Simon Deakin, *Legal Diversity and Regulatory Competition: Which Model for Europe?*, 12 EURO L.J. 440, 450 (2006) (comparing the US model of interstate competition with the European model centered around a single market).

Potential participants in virtual worlds benefit the most from this stacked regulatory dynamic. Largely unencumbered, they can choose on two levels. They can select among a multitude of virtual worlds managed by providers in multiple jurisdictions—and thereby choose the world that most closely correlates to their own individual preferences. Providers of virtual worlds, too, enjoy some freedom of choice. They can select the jurisdiction in which they want to be based, and all else being equal, will likely select a jurisdiction that offers a regulatory framework most conducive to managing a virtual world. By the same token, providers face competition in attracting customers. The value for providers of being able to arbitrage out of a real-world jurisdiction and relocate to a more hospitable one is offset by their customers' ability to do the same.

Real-world lawmakers are not so fortunate. They face arbitrage of valuable resources on two levels. First, providers can relocate to a different jurisdiction, arbitraging out of a real-world regulatory framework they find too stifling—and thus depriving lawmakers of tax income, and society of employment opportunities and the like. Second, even if providers stay put, present and future participants in virtual worlds may switch to a different virtual world managed by a provider in a different jurisdiction that is more hospitable to virtual worlds that most closely match the participant's personal preferences.

III. Countermeasures: Increasing Regulability of Virtual Worlds

Real-world lawmakers have a number of tools at their disposal to counter the danger of regulatory arbitrage on both the customer and provider level.

One countermeasure is to limit the ability of virtual world users to participate in virtual worlds provided in another jurisdiction.²⁰ For example, European lawmakers could prohibit European citizens from participating in a virtual world managed by a provider located outside of Europe. Or they could interdict the sale of virtual goods for real money, so that in the absence of virtual-world interoperability, the switching cost to a virtual world hosted abroad becomes prohibitively high. To an extent, such an approach has been implemented recently as the Unlawful Internet Gambling Enforcement Act, which constrains funds transfers between financial institutions and offshore

20. See Mayer-Schönberger & Crowley, *supra* note 1, at 1822 (suggesting lawmakers could "constrain competition among virtual world providers by making it difficult for users to switch providers").

online gambling sites.²¹ The fundamental aim of such a countermeasure is obvious: It attempts to reduce permeability between jurisdictions and the ability to arbitrage by increasing switching costs, not primarily for virtual world providers, but for their customers.

A second possible countermeasure is for real-world regulators to coordinate among themselves, and thus to eliminate the competitive dimension of the regulatory dynamic they face. Virtual world providers (and by extension their customers) can only arbitrage out of a particular regulatory regime if it is confined to a particular jurisdiction, and if other jurisdictions exist that do not impose similar constraints. If, however, real-world jurisdictions coordinate to enact the same or similar regulatory frameworks, the possibility for arbitrage would vanish for both providers and customers. Regulatory coordination is the most effective countermeasure to arbitrage; it simply stops regulatory competition.²²

The challenge lies in achieving a sufficiently broad and deep level of coordination. It needs to be broad to encompass all or most real-world jurisdictions, so as to eliminate or grossly limit the capability of providers and customers to switch. And it needs to be sufficiently deep, that is, cover sufficient behavior, to ensure that the coordinated set of rules is affecting arbitrage behavior. Because virtual worlds are communicative spaces, such coordination would likely necessitate an international agreement on permissible and prohibited speech. Given how significantly different the laws on free (and proscribed) speech are in various jurisdictions around the world, and how such laws reflect deeply held societal values, finding sufficiently common ground for a coordinated approach quite likely may pose an insurmountable challenge.²³

21. Unlawful Internet Gambling Enforcement Act, Pub. L. No. 109-347, §§ 801–803, 120 Stat. 1884, 1952–62 (2006) (codified as 31 U.S.C. §§ 5361–5367); see Ryan S. Landes, Note, *Layovers and Cargo Ships: The Prohibition of Internet Gambling and a Proposed System of Regulation*, 82 N.Y.U. L. REV. 913, 932–36 (2007) (explaining the issues related to the government's regulation of off-shore gambling); see also Gerd Alexander, *The U.S. on Tilt: Why the Unlawful Internet Gambling Enforcement Act Is a Bad Bet*, 2008 DUKE L. & TECH. REV. 0006 (2008) (critiquing the Act). Such a leakage limiting approach may violate international trade law. See generally Kathryn B. Codd, Note, *Betting on the Wrong Horse: The Detrimental Effect of Noncompliance in the Internet Gambling Dispute on the General Agreement on Trade in Services (GATS)*, 49 WM. & MARY L. REV. 941 (2007).

22. See Mayer-Schönberger & Crowley, *supra* note 1, at 1821–22 (proposing three measures to counter regulatory arbitrage: harmonizing virtual world regulations across jurisdictions, limiting users' ability to switch providers, and preventing users from choosing a provider located outside of their real life jurisdiction); Lazer & Mayer-Schönberger, *supra* note 19, at 829–36 (providing three modes of regulatory interdependence). For a real-world case of how coordination could stop regulatory competition, see Philipp Genschel & Thomas Plümper, *Regulatory Competition and International Co-Operation*, 4 J. EUR. PUB. POL'Y 626, 628 (1997).

23. I have sketched one potential way of finding a very narrow consensus based on

A third countermeasure is for real-world regulators to agree on establishing a joint meta-regulator that has the power to regulate virtual world providers directly without requiring national regulators to coordinate and agree. The establishment of a meta-regulator necessitates the delegation of regulatory power by real-world regulators. In return, such meta-regulation ensures a common regulatory framework (and thus the elimination, or at least vast reduction, of competition among real-world regulators) without requiring a potentially painstaking process of coordination among jurisdictions. Because it requires delegation, it reduces regulatory freedom of individual real-world regulators. On the upside, it enhances enforcement, while shrinking regulatory complexity and reducing the possibility for arbitrage.

The idea of a meta-regulator may seem to contradict the conventional view of national lawmakers retaining complete regulatory power.²⁴ However, meta-regulators do exist. Take for example the European Union. In accordance with its unique structure, member states have delegated far-reaching powers to the Union.²⁵ Three institutions at the Union level—the Commission, the Council, and the Parliament—work together to craft and enact legislation, which member states are bound to translate into national laws.²⁶ As a result, the European Union as a meta-regulator creates a more level regulatory playing field across EU member states without the need for national legislatures to complete a complex process of coordination.

These first three countermeasures are all based on conventional views of the power of real-world regulators to enact and enforce rules. The threat of arbitrage is reduced by limiting leakage, mostly through some form of coordination and cooperation across jurisdictional boundaries. The obvious advantage of these countermeasures is that they remain squarely within the existing conventional

peremptory norms of international law. See Tere E. Foster & Viktor Mayer-Schönberger, *A Regulatory Web: Free Speech and the Global Information Infrastructure*, 3 MICH. TELE. & TECH. L. REV. 45, 56–61 (1997).

24. For a view emphasizing the power of national regulators, see JACK GOLDSMITH & TIM WU, *WHO CONTROLS THE INTERNET?* 65–86 (2006).

25. For the standard competences, for example Articles 2–6 Treaty on the Functioning of the European Union, see Consolidated Versions of the Treaty on European Union and the Treaty on the Functioning of the European Union arts. 2–6, Sept. 5, 2008, 2008 O.J. (C 115) 1.

26. See, e.g., Consolidated Versions of the Treaty on European Union and the Treaty on the Functioning of the European Union, Sept. 5, 2008, O.J. (C 115) 1–388. If a member state fails to implement a Union mandate, it faces court action before the European Court of Justice. *Id.* art. 259. Under certain conditions European Union legal directives may become directly applicable even without an act of national translation. See Case 26–62, *NV Algemene Transport-en Expeditie Onderneming van Gend & Loos v. Netherlands Inland Revenue Administration*, European Court of Justice, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:61962J0026:EN:HTML> (Feb. 5, 1963) (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review).

system of real-world regulation through rule enactment and enforcement. The equally obvious shortcoming of these countermeasures is their reliance on the ability of territorially bounded nation-states protecting the distinct values of their respective societies to find sufficiently common ground for cross-jurisdictional action to minimize arbitrage. The challenge is to be both broad and deep, because if only one large jurisdiction opts to remain outside of such a coordinating setup, virtual world providers could flock to it, and thus offer themselves (as well as their customers) multiple options to arbitrage out of real-world regulatory regimes.²⁷

To overcome the structural shortcoming of these conventional countermeasures, one could go beyond real-world regulators in the enactment and enforcement of rules for virtual worlds, for example, by actively integrating into the regulatory mechanism providers of virtual worlds. At first this may sound counterintuitive. Why would providers, the immediate targets of real-world regulators, want to cooperate with those that want to regulate them? Bringing providers into the regulatory fold becomes more obvious, however, if we remember the context in which these providers operate. They are squeezed between real-world regulators insisting that they enforce real-world rules in the virtual world they provide, and the often quite different regulatory preferences of their worldwide customers. If they disregard the former, they risk real-world enforcement action, perhaps even criminal sanctions. If they disregard the latter, they risk losing valuable customers, and thus revenues.

To be sure, providers can escape this predicament by relocating to a different, more welcoming real-world jurisdiction, but that move, too, may be costly and is potentially risky—what guarantees that the new real-world jurisdiction will not tighten its regulatory regime in the future? Arguably, for providers of virtual worlds, ensuring a global level playing field of similar rules would eliminate the threat of customers switching to competitors in less strict regulatory jurisdictions, and thus lower the overall business risk providers face.

Moreover, by taking part in the regulatory process, providers may be given an official and important voice in what rules are enacted.²⁸ This is quite different from indirectly influencing the lawmaking process. Instead of having to invest in informal lobbying activities, real-world providers would be welcomed at the regulatory table and encouraged to take part in the rule-drafting process. This could offer providers some direct input in the design of the rules they are asked to enforce—a potential

27. See Mayer-Schönberger, *supra* note 11, at 629 ("If a global consensus cannot be reached, but a few nations decide plurilaterally to enact and enforce their own cyber-rules, what legitimacy do they possess to implicitly govern the citizens of states who have not joined the group?").

28. On the concepts of "voice" and "exit," see ALBERT O. HIRSCHMAN, *EXIT, VOICE, AND LOYALTY: RESPONSES TO DECLINE IN FIRMS, ORGANIZATIONS, AND STATES* 4 (1970).

improvement to the current situation in which they are obliged to enforce real-world rules without having a formal say in the process of their creation.

Real-world regulators, too, could potentially gain from such a setup of hybrid public/private governance. Bringing providers into the fold, for example, could increase the chances for successful enforcement. As this Article has explained above, providers, unlike real-world regulators, are uniquely positioned to enforce rules—by adjusting the software code as well as amending the terms of service.²⁹ Including providers in a governance solution ensures that their enforcement tools—software code and Terms of Service/EULAs—are utilized effectively. Equally important, if providers understand that this may create a more level playing field, the exact shape of which they can influence, they may become less inclined to exercise arbitrage and move to a different jurisdiction. Moreover, by including providers in the process of governing, providers may identify with the jointly enacted rules and enforce them deftly—much more so than if they were simply receiving orders from real-world regulators. Finally, including providers into a mechanism to regulate virtual worlds may also turn out to be cheaper for real-world regulators, as it effectively outsources rule enforcement to them.

Unsurprisingly, therefore, real-world regulators have toyed around with such hybrid governance mechanisms in other areas. Such a setup, termed co-regulation,³⁰ exists in a number of nations to protect minors from questionable content,³¹ as well as to regulate advertising.³²

29. See *supra*, notes 9–11 and accompanying text (discussing provider's ability to control user conduct by contractual agreement).

30. Cafaggi defines co-regulation as arrangements "where private regulators have been called upon to take part in different stages of the regulatory process." See Fabrizio Cafaggi, *Rethinking Private Regulation in the European Regulatory Space* 20, (EUI Law Working Papers No. 2006/13, 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=910870. Eijlander defines co-regulation as "cooperation between the public and the private actors in the process of creating new rules." See Philip Eijlander, *Possibilities and Constraints in the Use of Self-Regulation and Co-Regulation in Legislative Policy: Experiences in the Netherlands—Lessons to Be Learned for the EU?*, Vol. 9.1, ELECTRONIC J. COMP. L. (2005), <http://www.ejcl.org/91/art91-1.html> (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review). See generally Linda Senden, *Soft Law, Self-Regulation and Co-Regulation in European Law: Where Do They Meet?*, Vol. 9.1 ELECTRONIC J. COMP. L. (2005), <http://www.ejcl.org/91/art91-3.html> (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review).

31. A recent study identified such co-regulation arrangements in Australia, Austria, Canada, Germany, Italy, the Netherlands, the United Kingdom, Slovenia, and South Africa. See *Study on Co-Regulation Measures in the Media Sector*, FINAL REPORT (Hans-Bredow-Institute/EMR, Hamburg, Germany), June 2006, available at http://ec.europa.eu/avpolicy/docs/library/studies/coregul/final_rep_en.pdf; see also Wolfgang Schulz, *Neue Ordnung durch neues Medienrecht? Modelle der Co-Regulierung im Medienbereich*, in *ORDNUNG DURCH MEDIENPOLITIK* 217–32 (Otfried Jarren ed., 2007).

32. Co-regulatory regimes were found to exist in France, Germany, Greece, the

Obviously, the approach works best when the co-regulation arrangement between a traditional real-world regulator and private sector entities ensures a high level of compliance, and when there is limited arbitrage among providers (as well as users) to exit the jurisdictions and thus bypass the co-regulatory framework; hence, its application to classical broadcast media, with limited capacity for cross-jurisdictional spillovers. An Italian terrestrial broadcaster unhappy with the national co-regulatory framework can hardly move to the U.S. to sell her wares into Italy from there.

Language differences and relatively concentrated information flows may make some co-regulation even feasible on the Internet, where technically arbitrage is costless.³³ This is the reason why the co-regulation system of protecting minors has been extended to Internet offerings in Australia, Germany, and Italy.³⁴ This is not to suggest that co-regulation is a superior mechanism of governance; only that it offers real-world regulators a further possible countermeasure against provider and user arbitrage.

The three countermeasures this Article has detailed are not necessarily exclusive. It is possible to combine them to improve overall regulatory effectiveness. Co-regulation, for instance, is not limited to cooperative arrangements between private sector entities and national real-world regulators; it may also be combined with meta-regulation.

The European Union, a meta-regulator, has been employing such a co-regulatory approach in contexts like setting product standards³⁵ and protecting the environment.³⁶ The European Commission aptly defines co-regulation as combining "binding legislative and regulatory action with actions taken by the actors most concerned, drawing on their practical expertise," and concludes that "[t]his often achieves better compliance, even where the detailed rules are non-binding."³⁷ Unsurprisingly, given this strong endorsement, the European Union

Netherlands, Slovenia, and the United Kingdom. See *Study on Co-Regulation Measures in the Media Sector*, *supra* note 31, at 39–103.

33. Over time language barriers may recede and information flows shift to less concentrated media, thus rendering co-regulation systems less effective.

34. *Id.*

35. At the heart of co-regulation in product standards setting is the European Union's so-called "New Approach"; see Council Resolution of 7 May 1985, On a New Approach to Technical Harmonization and Standards, 1985 O.J. (C 136) 1–9, available at [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31985Y0604\(01\):EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31985Y0604(01):EN:HTML).

36. See, e.g., Commission Recommendation of 5 Feb. 1999, On the Reduction of CO2 Emissions From Passenger Cars, 1999 O.J. (L 40) 50, available at <http://ec.europa.eu/environment/air/transport/co2/99125/en.pdf>.

37. *European Commission White Paper on European Governance*, at 21, COM (2001) 482 final (July 25, 2001).

has announced its intention to use co-regulation more frequently.³⁸ Even more to the point, recent studies commissioned by the European Union point towards the regulation of virtual worlds as a possible new sector conducive to co-regulation between private sector entities and the European Union.³⁹

Thus it seems that at least in Europe the regulatory landscape for virtual worlds may be developing toward a relatively distinctive arrangement of co-regulation between a powerful real-world meta-regulator, the European Union, and virtual world providers with their unique technical and organizational enforcement capabilities.

IV. Tensions on the Meta-Level

So far, and despite some complexities, the overall narrative seems relatively straightforward. Real-world regulators face potential arbitrage behavior on two levels—among virtual world providers and among their customers, the individual participants in virtual worlds. It is in the interest of real-world regulators to limit this arbitrage.

This can be achieved primarily by moving the governance mechanism either upward, toward a meta-regulator with a geographically broader enforcement reach, or downward, by bringing providers into the regulatory fold and thereby utilizing their technical and organizational enforcement capabilities. Combining the two approaches for potentially unprecedented effectiveness is co-regulation between providers and a meta-regulator, as currently advanced by the European Union.

We began with a simple image of users participating in a virtual world managed by a provider constrained by a real-world regulator. In such a setup, there is no threat of arbitrage. But in reality, there is, and so we had to adapt our image by adding multiple providers and multiple real-world regulators. As a consequence, constraining arbitrage turned into one of the key strategies for real-world regulators, and to achieve that we had to expand the governance mechanism employed downward toward the private sector and upward toward a meta-regulator. It seemed such a setup could establish an effective, yet stable, governance mechanism for interactions in virtual worlds. But our hopes may be squashed.

38. *Id.*

39. See, e.g., *Study on Co-Regulation Measures in the Media Sector*, *supra* note 31, at 39–103 (reporting the efforts of certain countries in co-regulating internet content); Eur. Comm. Directorate-General, *Options for and Effectiveness of Internet Self- and Co-regulation*, RAND REPORT TR-566-EC (Feb. 2008) (*prepared by* Jonathan Cave et al.).

Co-regulation with a meta-regulator works because the meta-regulator can overcome both the limited territorial reach of individual real-world national regulators and the coordination challenge faced by multiple real-world national regulators desiring to regulate jointly. This necessitates, however, that the meta-regulator itself is a unitary entity with clear policy priorities. That is rarely the case. In fact, the very structure of the governance mechanism employed to regulate virtual worlds—co-regulation—may over time undermine the ability of a meta-regulator to speak with one voice. Put more starkly, broadening governance mechanisms to include providers may undermine the very ability of a meta-regulator to act. This has to do with how co-regulation is intended to work.

Co-regulation reaches out to providers. For regulation to be effective, the providers representing most of the market especially have to be brought into the regulatory fold. For example, when co-regulating with Internet search providers, leaving out Google would render the regulatory attempt ineffective. This is the reason why real-world regulators prefer highly concentrated or highly organized markets for co-regulation because market concentration or organization limits the number of private-sector entities with which they have to cooperate and coordinate. Certain public values, like the protection of minors, can be achieved more easily. Even where markets are more fragmented, real-world regulators initially may reach out to a relatively small number of private sector players or to professional associations or industry groups representing a larger number of such players.

At the same token, even if in principle they are open for other private sector entities to join, such arrangements may structurally advantage those that are "in"—they potentially gain not only early access to pertinent regulatory information, but also may have direct input in how the regulatory landscape is being shaped. Insofar as this translates into market power, co-regulation may potentially further concentration processes. If co-regulation is utilized to protect public values in sectors that already have a relatively high market concentration among a small number of players, *ceteris paribus* such concentration may increase further.

This may happen in the context of virtual worlds. Much of the market is captured by a relatively small number of providers, arguably with Blizzard Entertainment's *World of Warcraft* taking a huge lead among Western users.⁴⁰ This delights public values regulators, as they have a limited number of private sector entities to include in co-regulation. Such market concentration, however,

40. See Wagner James Au, *supra* note 1 (reporting *World of Warcraft* as the largest grossing MMO of 2008, with estimated revenue in excess of \$500 million).

may worry regulators aiming to ensure robust and competitive markets, and real choices for individuals selecting a virtual world to homestead in. As a result, these "choice" regulators may desire to limit the concentration process among virtual worlds, and to bolster competitive forces. The most obvious way to do so (taking a page from recent telecom deregulation) is to lower switching costs for individuals so that virtual world participants are not locked into worlds managed by large incumbents.⁴¹ There are numerous ways to lower switching costs: from permitting virtual goods to be traded for real money to granting users IP rights in their virtual goods to making virtual worlds interoperable.⁴² Initiatives such as OpenID⁴³ and OpenGrid⁴⁴ are already offering some elements of interoperability, and regulatory activity may give such efforts a decisive boost.⁴⁵

Any effort in lowering switching costs for participants, however, also increases the likelihood of arbitrage—precisely what public values regulators endeavor to limit. Much then depends on who regulates for public values, and who regulates for market choice. If one is done by a national regulator, and the other by a meta-regulator, the latter likely will prevail. If, however, both public-value regulation and market-choice regulation happens at the same governance level—it does not matter whether by a national or a meta-regulator—the efficacy of such public-value regulation will likely prompt a reactive market-choice regulation, and vice versa.

Some may argue that such infighting among regulators may be resolved through further coordination in the legislative process. In theory, this may be the case. In practice, however, legislative measures often do not arrive at the same time, and the mechanisms by which they constrain each other may not be apparent to legislators (or more selfish considerations for reelection may not prompt them to care).⁴⁶

41. On switching costs, see CARL SHAPIRO & HAL VARIAN, INFORMATION RULES 103–04 (1999).

42. For a discussion on the incentives for providers to offer interoperability, see Mayer-Schönberger & Crowley, *supra* note 1, at 1815–17.

43. "OpenID is an open, decentralized, free framework for user-centric digital identity." OpenID, What Is OpenID?, <http://openid.net/what> (last visited Sept. 29, 2009).

44. OpenGrid permits virtual worlds based on the *Second Life* structure to interoperate, see Second Life Wiki, Open Grid Public Beta, http://wiki.secondlife.com/wiki/Open_Grid_Public_Beta (last visited Sept. 29, 2009).

45. See Urs Gasser & John Palfrey, *Case Study: Digital Identity Interoperability and eInnovation*, (Berkman Cen. Res. Pub. No. 2007-11, 2007), available at <http://ssrn.com/abstract=1070061> (considering the current state of user identification interoperability).

46. The European Union is saddled with an additional structural challenge to resolve such internal tensions, as certain market choice legislation can be enacted by the Commission without

V. Fundamental Limitations of the Regulability of Virtual Worlds

This troubling outcome is bound to happen whenever (a) co-regulation is used as a governance mechanism to protect public values because the theoretical risk of arbitrage is substantial and the sector to regulate is highly concentrated, and (b) a separate regulatory entity is tasked with ensuring market choice and robust competition.

In 1927, physicist Werner Heisenberg explained how the position and the momentum of a particle cannot both be measured with certainty.⁴⁷ The more one pushes for precision of measuring one variable, the less exactly one will know the value of the other. Even using the inclusive mechanism of co-regulation to regulate virtual worlds, we encounter a somewhat similar barrier: Real-world regulators cannot co-regulate for public values the way they have without eventually triggering market-choice regulation that in turn triggers public-values regulation and so forth. The more a regulator aims for market concentration to co-regulate effectively for public values, the more this triggers market-choice concerns—and thus regulatory action, and vice versa.

Much like position and momentum of particles are conjugated variables, so are public values and market choice conjugated *goals* in the context of co-regulation, fundamentally limiting the regulability of virtual worlds. This Article thus suggests calling this the virtual world regulability limitation principle.

VI. Conclusions

Real-world regulators intending to regulate virtual worlds face a complex undertaking. With multiple virtual world providers in multiple jurisdictions, both virtual world providers and users have some freedom of choice based on their preferences. Real-world regulators may stem such arbitrage by reducing permeability, coordinating with regulators in other jurisdictions, transferring regulatory power to a meta-regulator, or co-regulation—including providers into the regulatory and governance mechanism. These measures are not

the Council and the Parliament, while some public value legislation may not require participation of the Commission. This cements rather than resolves the inherent tension of two meta-regulators with two distinct value sets.

47. See Werner Heisenberg, *Über den anschaulichen Inhalt der quantentheoretischen Kinematik und Mechanik*, 43 ZEITSCHRIFT FÜR PHYSIK 172, 172–98 (1927) (articulating his uncertainty principle of quantum physics); ROGER PENROSE, *THE ROAD TO REALITY* (2004) 521–24.

necessarily exclusive, and combinations, such as co-regulation with a meta-regulator, may offer improved effectiveness.

There is a limit, however, to what extent such co-regulation can be successful. Public values and market choice are conjugated goals in the context of co-regulation, fundamentally limiting the regulability of virtual worlds, pointing toward a virtual world regulability limitation principle.

NOTES
