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Wikitruth Through Wikiorder

David A. Hoffman
University of Pennsylvania Carey Law School

Salil K. Mehra
Temple University

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David A. Hoffman[*]
Salil K. Mehra[**]

ABSTRACT

How does large-scale social production coordinate individual behavior to produce public goods? In 1968, Hardin denied that the creation of public goods absent markets or the State is possible. Benkler, Shirky, Zittrain, and Lessig recently countered that the necessary coordination might emerge though social norms. However, scholars have not fully explained how this coordination is to occur.

Focusing on Wikipedia, we argue that the site's dispute resolution process is an important force in promoting the public good it produces, i.e., a large number of relatively accurate public encyclopedia articles. We describe the development and shape of Wikipedia's existing dispute resolution system. Further, we present a statistical analysis based on coding of over 250 arbitration opinions from Wikipedia's arbitration system. The data show that Wikipedia's dispute resolution ignores the content of user disputes, and focuses on user conduct instead. Based on fairly formalized arbitration findings, we find a high correlation between the conduct found and the remedies ordered. In effect, the system functions not so much to resolve disputes and make peace between conflicting users, but to weed out problematic users while weeding potentially productive users back in to participate.

Game theorists have modeled large-scale social production as a solution to the herder problem/multi-player Prisoner's Dilemma. But we demonstrate

that the "weeding in" function reflects dynamics more accurately captured in coordination games. In this way, dispute resolution can provide a constitutive function for the community.

INTRODUCTION

> *[On Wikipedia] any user can change any entry, and if enough users agree with them, it becomes true. . . . Together we can create a reality that we can all agree on—the reality we just agreed on.*
>
> —Stephen Colbert[1]

> *People didn't join our noble project to gift humanity with a treasure of knowledge in order to combat drunken Bosnian misogynists at 5AM!*
>
> —Jimmy Wales, Founder, Wikipedia[2]

Charles Darwin and Abraham Lincoln were both born on February 12, 1809. When some people hear about this coincidence, it seems remarkable.[3] For others, it is mundane. [4] For Wikipedia editors working on the encyclopedia's articles about Darwin and Lincoln, the *very notability of the factoid* was the subject of a contentious dispute resolution process that encompassed two polls, outside editor comments, a request for mediation, and a formal arbitration proceeding that generated over 30,000 words in evidentiary submissions and thousands of volunteer hours.[5]

Because Wikipedia's editing process is open, editors who disagreed about whether the shared birthday merited inclusion in Darwin's biography might have endlessly recycled their views, leading to an unstable article, entrenched disagreement, and a loss of initiative, altogether destroying the site's utility. In response to this systemic issue, Wikipedia has developed a volunteer-run, highly articulated dispute resolution system. That system starts with the informal, guided exchange of views, muddles through mediation, and ends with referral to an Arbitration Committee that hears evidence presented by the parties before issuing findings of fact and conclusions of policy and law. Such

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[1] *See Colbert Nation: The Word—Wikiality* (Comedy Central television broadcast July 31, 2006), *available at* http://www.colbertnation.com/the-colbert-report-videos/72347/july-31-2006/the-word---wikiality.

[2] Posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-l, http://markmail.org/message/pcxxq6ibrlckxw5q#query:+page:1+mid:trbc4btbio3uyxy4+state:results (Oct. 4, 2003).

[3] *See, e.g.*, Malcolm Jones, *Who Was More Important: Lincoln or Darwin?*, NEWSWEEK, Jul. 14, 2008, at 30 ("As soon as you do start comparing this odd couple, you discover there is more to this birthday coincidence than the same astrological chart (as Aquarians, they should both be stubborn, visionary, tolerant, free-spirited, rebellious, genial but remote and detached—hmmm, so far so good).").

[4] Shared birthdays are surprisingly common. In a typical law school classroom of sixty people, for example, it is 99% certain that two students will share a birthday. *See* Birthday Problem, http://en.wikipedia.org/wiki/Birthday_paradox (last visited May 12, 2009).

[5] Wikipedia: Lamest Edit Wars/Miscellameness, http://en.wikipedia.org/wiki/Wikipedia:Lamest_edit_wars/Miscellameness#Charles_Darwin (last visited Feb. 15, 2009).

Committee decisions, organized by volunteer arbitration clerks and disseminated by volunteer reporters, have created a virtual Wiki-common law.

After binding arbitration in this curious case, two editors were banned from the site for a month for their lack of cooperation with others, and one was further prohibited from editing articles about either Darwin or Lincoln.[6] A third individual was formally thanked by the arbitrators for his work as a counselor to one of the banned parties.[7] The arbitrators, following their usual rule, avoided the content of the dispute: non-banned parties were free to continue debating whether the emancipator and the scientist's shared birthday was worthy of note.[8]

This story raises two puzzling questions:

- *Why do people spend time editing Wikipedia articles, and why do they care enough about this particular fact to disagree?*

- *Why does Wikipedia have a dispute resolution system that doesn't resolve disputes?*

These questions highlight a deep problem at the center of a rich new literature on the production of public goods online and provide a framework for this Article. Cyberlaw theorists like Yochai Benkler and Jonathan Zittrain have posited that the Internet has fundamentally transformed the economics of social production: lower transaction costs, coupled with the innate capabilities of motivated individuals, enable us all to benefit from a flourishing digital commons.[9] This utopian vision has proven somewhat controversial, however, as scholars generally have not articulated a mechanism that would coordinate such altruistic production. Wikipedia is "the canonical bee that flies despite scientists' skepticism that the aerodynamics add up."[10]

This Article attempts to shed some light on the coordination problem, which is of pressing concern to cyberlaw theory and to students of the new internet-based economy. We argue that virtual legal systems do and must play a fundamentally important coordinating role. As support for our claim, we provide the first close look at the history and current functioning of

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[6] Wikipedia: Requests for Arbitration/Charles Darwin-Lincoln Dispute, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/Charles_Darwin-Lincoln_dispute (last visited Feb. 15, 2009).

[7] *Id.*

[8] *Id.*

[9] *See infra* notes 19–26.

[10] JONATHAN ZITTRAIN, THE FUTURE OF THE INTERNET AND HOW TO STOP IT 148 (2008).

Wikipedia's dispute resolution system. We also rely on a statistical analysis of a hand-collected data set of the decisions of Wikipedia's Arbitration Committee.

We conclude that Wikipedia's dispute resolution system coordinates social production by distinguishing between two types of disruptive users: on the one hand, anti-social misfits whose behavior is particularly vile or who try to hide their biases; and on the other, mere rule-breakers who want to continue to contribute their energy toward making articles better.[11] The former are exiled from the community, while the latter are encouraged to continue to engage in disputes. That is, for some kinds of contests, Wikipedia appears to have created the first dispute resolution system whose goal is to encourage the parties to continue to dispute with one another. This argument-generating dispute resolution system makes perfect sense, however, when you consider that open source editing depends on a certain amount of friction about the content of articles. Wiki-litigation is the engine that drives its large-scale social production.

Our Article proceeds in three parts. First, we describe the literature on online social production and argue that existing theories have not adequately explained how large numbers of people are to be organized to create public goods. Second, we describe Wikipedia's dispute resolution system. Third, we develop a new theory of online dispute resolution, which we call Constitutive Conflict. Our approach draws heavily on game theory to envision online dispute resolution as a solution to the problem of segregating pro- and anti-social individuals. We conclude by discussing whether Wikipedia's solution to the problem of coordinating social production is generalizable.

I.   THE PROBLEM OF ONLINE SOCIAL PRODUCTION

Wikipedia's success is confounding. "The most common criticism of Wikipedia over the years stemmed from simple disbelief: 'That can't work.'"[12] The root of this confusion is in part obvious—in a legal academy often

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[11] At any moment, the dispute resolution system described in this paper might change as the Wikipedia community adopts new and different mores, rules, and processes. We can warrant only that our conclusions are accurate as of the early summer of 2009, and our analysis refers to the dispute resolution system as it existed between 2006 and 2008. Additionally, like all Wikipedia pages, the Wikipedia arbitration decisions are subject to alteration. The authors worked from hard copies printed in July 2008 and retain these copies on file.

[12] CLAY SHIRKY, HERE COMES EVERYBODY: THE POWER OF ORGANIZING WITHOUT ORGANIZATIONS 115 (2008).

dominated by economic rhetoric, Wikipedia remains a site largely run and created by volunteers.[13] Altruism between strangers is not supposed to happen on such a large scale.[14] But the absence of money is only the beginning of the problem. Wikipedia is also surprisingly accurate and stable.[15] Large-scale, altruistic, social production (LSSP) of this type is quite rare.[16]

In this Part, we first explain why these characteristics pose a challenge for legal scholars and then discuss the various existing, but ultimately unsatisfying, explanations for Wikipedia's success.

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[13] Wikipedia is formally owned by the Wikimedia Foundation, a nonprofit corporation formed on June 20, 2003, with offices in California. Wikimedia Foundation, Frequently Asked Questions, http:// wikimediafoundation.org/wiki/Frequently_Asked_Questions (last visited June 1, 2009). Wikimedia is governed by ten board members: three elected from the community of Wikipedia's users; two appointed from various Chapters of the foundation; James Wales; and four "specific expertise" seats elected by the board itself. Wikimedia Foundation, Wikimedia Foundation Bylaws, http://wikimediafoundation.org/wiki/ Wikimedia_Foundation_bylaws#Section_3._Selection. (last visited June 1, 2009). As of August 2009, the Foundation employed twenty-seven employees. Wikimedia Foundation, Frequently Asked Questions, http://wikimediafoundation.org/wiki/Frequently_Asked_Questions (last visited June 1, 2009). The Wikipedia website generates relatively little money, as it rejects advertising. The Wikipedia Foundation raises revenues largely through grants and donations. WIKIMEDIA FOUNDATION, 2007-2008 ANNUAL REPORT, *available at* http://upload.wikimedia.org/wikipedia/foundation/2/2a/WMF_20072008_Annual_report.pdf.

[14] Richard A. Posner, *Rational Choice, Behavioral Economics, and the Law*, 50 STAN. L. REV. 1551, 1557 (1998) (concluding that seemingly altruistic acts sometimes arise out of self-interest and the rational choice to increase another's welfare if doing so will also increase one's own welfare).

[15] *See* Jim Giles, *Special Report Internet Encyclopedias Go Head to Head*, 438 NATURE 900, 900 (2005) (stating that "a *Nature* investigation finds" that "Jimmy Wales' Wikipedia comes close to *Britannica* in terms of the accuracy of its science entries" (alteration to the original)). *But see* Encyclopaedia Britannica, *Fatally Flawed: Refuting the Recent Study on Encyclopedic Accuracy by the Journal*, Nature (Mar. 2006), http://corporate.britannica.com/britannica_nature_response.pdf (stating that *Britannica* is more accurate than Wikipedia). *See also* Marshall Poe*, The Hive*, THE ATLANTIC MONTHLY, Sept. 2006, at 86, 94, *available at* http://www.theatlantic.com/doc/200609/wikipedia (stating that, despite this debate, it is widely accepted that Wikipedia is comparable to *Britannica*).

[16] There are other examples of commons-based peer production, but they have sometimes had to turn to traditional methods of propertization to deal with problems and controversy. For example, the collaborative technology discussion site Kuro5hin ran into problems with disruptive users and turned to a subscription, fee-based model. *See* Rusty, *K5 Becomes "Gated Dysfunctional Community,"* Sept. 10, 2007, http://www. kuro5hin.org/story/2007/9/10/13920/3664 (describing how problems led to a subscription charge). The open source-produced Linux has also become embroiled in a naming and crediting controversy. *See* Richard Stallman, *Linux and the GNU Project*, http://www.gnu.org/gnu/linux-and-gnu.html (last visited Feb. 17, 2009) (describing how the GNU project is aimed at developing a whole operating system, while Linux is simply a component, the kernel, of that system, which required a lot of work to integrate; observing that "[t]he GNU Project supports GNU/Linux systems as well as *the* GNU system"; noting that the Free Software Foundation "funded the rewriting of the Linux-related extensions to the GNU C library, so that now they are well integrated"; and arguing that the system should be referred to as "GNU/Linux").

A. *LSSP and the Motivational Challenge*

Only extreme versions of the rational actor theory deny that altruism plays an important role in motivating behavior. Individuals may have a preference for sharing their knowledge with others—just as they may have a taste for justice, wealth, or pleasure[17]—but some theorists are surprised to see LSSP occur since the requisite cooperative behavior is a public good. The tragedy of the commons predicts that individual actors will under-produce such goods because each is motivated to free-ride.[18]

Cyberlaw theorists generally address the question of why so many people would spend so much time online working for others by pointing to decreases in barriers to act rather than increases in motivation.[19] They argue that the same kinds of motivations exist online and offline, but "the material conditions of production in the networked information economy have changed in ways that increase the[ir] relative salience."[20] In other words, the lower transaction and production costs made possible by cheap computing power and free networks encourage production based on sharing, rather than on exchange or

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[17] *See* David A. Hoffman & Michael P. O'Shea, *Can Law and Economics Be Both Practical and Principled?*, 53 ALA. L. REV. 335, 353 (2002) (describing the generous view of preferences under welfare economics).

[18] *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE, 1243, 1245 (1968) (concluding that to avoid the tragedy of the commons with respect to public parks, "[w]e have several options. We might sell them off as private property. We might keep them as public property, but allocate the right to enter them. . . . But we must choose—or acquiesce in the destruction of the commons . . . ."). *See also* MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION 28 (1968) (arguing that individuals in any group attempting collective action will have incentives to free-ride on the efforts of others if the group is working to provide public goods).

[19] Benkler largely elides the question of whether the motivation is internal or external, terming it "social-psychological," on the ground that it is not germane to his main point. YOCHAI BENKLER, THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM 96–97 (2006). He provides varying examples such as dinner invitations, blood donations and amateur athleticism to make the point that individuals have nonmonetary motivations. *Id.* at 92–97. Others building on and critiquing Benkler's work make similar points. *See* LAWRENCE LESSIG, REMIX: MAKING ART AND COMMERCE THRIVE IN THE HYBRID ECONOMY 143–45 (2008) (describing how he offended a teenager on a cross-country flight by offering to pay to borrow one of the teenager's DVDs). *But see* Lior Jacob Strahilevitz, *Wealth Without Markets?*, 116 YALE L.J. 1472, 1480 (2007) (reviewing Benkler's *The Wealth of Networks* and observing that Benkler's reliance on Titmuss's theories about blood donations may be misplaced due to later evidence suggesting that "the question of whether an optimal blood provision regime relies on paid or charitable contributions is once again debatable"). *See also* John Quiggin & Dan Hunter, *Money Ruins Everything*, 30 HASTINGS COMM. & ENT. L.J. 203, 204–05 (2008) (arguing that economic assumptions of commercial providers of content are called into question by amateur creators who produce content with non-commercial motives).

[20] BENKLER, *supra* note 19, at 92.

coercion.[21] That said, lower transaction costs, combined with latent altruism, explain increased participation, but do not explain why or how that participation is channeled into socially useful, productive activity.

B. LSSP and the Coordination Challenge

Altruists, like cats, are difficult to herd. Consider the problem of providing an effective response to a social disaster such as Hurricane Katrina. Many individuals suddenly might prefer to help stranded victims; some might even have felt that preference so strongly that they trekked to New Orleans. Once there, however, their altruistic impulse would have foundered. Individuals standing alone cannot network easily with others to build levees, to collect and distribute food, to commandeer and lead rescue operations, or to rebuild neighborhoods. That is, individual altruistic efforts are largely limited to particularized acts of heroism, while large-scale social production is largely the province of preexisting social services (nonprofit firms like the Red Cross) and the government itself. While small groups have been shown to be capable of producing and maintaining public goods,[22] altruistic production simply does not scale well offline.[23]

Perhaps, as Yochai Benkler has argued, the online world is distinct.[24] Because of technologically-empowered cooperation through sharing over networks, Benkler posits that production may occur "outside of the proprietary marketplace altogether."[25] Some have praised Benkler's account as "a remarkable corrective" to the story of the tragedy of the commons discussed in

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[21] Reviewers of this theory have pointed to its relationship to Aristotle's insight that "excess capacity," such as that of an aristocracy, can yield socially useful resources such as civil society. Strahilivetz, *supra* note 19, at 1476–77 (citing Aristotle's *The Politics*) (reviewing Benkler); Jedediah Purdy, *A Freedom-Promoting Approach to Property: A Renewed Tradition for New Debates*, 72 U. CHI. L. REV. 1237, 1282 (2005) (relating Aristotle's identification of "the rich man's capacity for magnanimity as a justification of economic inequality" to "the capability to be generous without being self-sacrificing" that Purdy sees as "made achievable by peer production" in Benkler's theory).

[22] ROBERT C. ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES 282–83 (1991) (demonstrating a small community's reliance on informal norms rather than formal law).

[23] Strahilevitz, *supra* note 19, at 1495 (reviewing Benkler and citing Benkler's failure to address whether socially produced resources will be resilient against malicious users).

[24] BENKLER, *supra* note 19, at 92 ("[T]he material conditions of production in the networked information economy have changed in ways that increase the relative salience of social sharing and exchange as a modality of economic production.").

[25] *Cf.* Strahilevitz, *supra* note 19, at 1485. Strahilevitz describes Benkler as the "first scholar to realize" this point, a "terrific theoretical insight" that "extend[s] Coasean economic analysis of the firm [to make or buy based on transaction costs] to social production via the commons." *Id.* at 1484–85.

the previous section.[26] But given the general concern that the commons will tend towards tragedy, how does this proposed solution actually work?[27]

The problem is serious because absent some sort of control, LSSP online might degenerate into a "march of the trolls".[28] Indeed, as critics have questioned, what "empirical data support[]" the claim that production "based on social relations, rather than through markets or hierarchies," will be sustainable and competitive?[29] And won't LSSP "become[] an attractive target for the mischief-makers, proprietary competitors, free-riders, sketchy opportunists, and well-meaning dolts whose arrival can drive away the cooperators who built the successful network" at the heart of social production?[30] Others are perhaps moderately enthusiastic: "We are living through an existence-proof that there are other methods of generating innovation, expression, and creativity than the proprietary, exclusionary model of sole control," but "[i]t is important not to overstate how far the sharing economy can get us."[31]

C. Wikipedia as a Solution in Action

The specific case of Wikipedia demands answers to questions of how the site induces individual motivation and group cooperation. As with social production, the first question—why individuals participate—has been seen as largely unimportant. Benkler explicitly sidesteps this question by claiming that "[i]t is not necessary to pin down precisely the correct or most complete theory of motivation . . . . All that is required to outline the framework for [his] analysis is recognition that there is some form of social and psychological

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[26] JAMES BOYLE, THE PUBLIC DOMAIN: ENCLOSING THE COMMONS OF THE MIND 192 (2008) (emphasis omitted). Boyle also refers to the work of Lawrence Lessig on this point. *Id.*

[27] *See generally* Hardin, *supra* note 18, at 1243–48; OLSON, *supra* note 18, at 76 (describing how labor unions engaged in collective bargaining can suffer from free-rider problems since, given a choice, the rational worker would not join if he or she could still share in the successes that the union achieves, e.g., higher pay).

[28] "Troll" is the Internet slang for someone who participates in a forum disruptively *See also* Strahilevitz, *supra* note 19, at 1493 (discussing Benkler's underestimation of the pitfalls that social production faces).

[29] Brett M. Frischmann, *Cultural Environment and* The Wealth of Networks, 74 U. CHI. L. REV. 1083, 1117 (2007) (reviewing BENKLER, THE WEALTH OF NETWORKS).

[30] Strahilevitz, *supra* note 19, at 1515 (pointing out lapses in Benkler's conception of social production).

[31] BOYLE, *supra* note 26, at 200–01 (observing that the sharing economy may "help to cut the costs of early-stage drug development" but "will not generate a Phase III drug trial or bring a drug to market"). Similarly, while Lior Strahilevitz accepts the claim that, currently "a large portion of the wealth that exists in society arises from . . . nonproprietary motivations," he is less sanguine about the future strength of such motivations on the Internet. Strahilevitz, *supra* note 19, at 1474, 1476.

motivation that is neither fungible with money nor simply cumulative with it."[32]

Instead, Benkler's focus, and that of others, has been on why dispersed individuals cooperate in LSSP. Benkler relies on two internally generated social norms to solve the coordination problem—a "dedication . . . to objective writing" and the "self-conscious use of open discourse, usually aimed at consensus." [33] Under Benkler's account, although Wikipedia's site's administrators can block disruptive users, "this power seems to be used rarely."[34]

Some have challenged Benkler's social-norm driven account of Wikipedia's success.[35] While Wikipedia may be a collective product, the pseudonymous nature of its participants' activity leaves "very little room for personal fame" or even individual identity, which ought to undermine its ability to function as a community.[36] Similarly, linguistic analysis has found the nature of interaction in Wikipedia to be more consistent with the exercise of power than with norms and community.[37] As a result, the power of norms and consensus building should be relatively weak.

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[32]   BENKLER, *supra* note 19, at 96.

[33]   *Id.* at 72.

[34]   *Id.*

[35]   *See, e.g.*, Quiggin & Hunter, *supra* note 19, at 228–29 (describing how the lack of reputational identity on Wikipedia makes norms-based enforcement difficult since "there is very little room for personal fame"); Henry Farrell & Melissa Schwartzberg, *Norms, Minorities, and Collective Choice Online*, 22 ETHICS & INT'L AFF., (2008), *available at* http://www.cceia.org/resources/journal/22_4/essays/002.html (last visited Jan. 14, 2009) ("If it were the case that . . . humility, rather than subordination, caused those in the minority on an issue [on Wikipedia] to retreat, we might say that the norm of apparent consensus was eliciting attractive moral behavior on the part of the minority[, but] . . . . [w]e suspect that power, rather than the recognition of one's fallibility, is the mechanism generating apparent consensus in many, if not most, controversial cases." (footnote omitted)); Christopher Goldspink, Social Self-Regulation in Computer Mediated Communities: The Case of Wikipedia 12–14 (2008) (unpublished manuscript, on file with author Mehra) (conducting linguistic coding and analysis of a sample of controversial articles' discussion pages and observing that "[t]he absence of any expression of acknowledgement of emotions and/or similarity of attitude (homophilly) among many contributors suggests that Wikipedia lacks many of the qualities of verbal exchange that would identify it as a strong community" and instead "is more consistent with being a place to share coordination of a task" and so "the order observed may be largely attributable to the prior sociali[z]ation of participants with local norms and rules playing a very minor part").

[36]   Quiggin & Hunter, *supra* note 19, at 228–29 (discussing the development of blogging and its use as a means of self-expression and social interaction).

[37]   *See* Farrell & Schwartzberg, *supra* note 35 (using analysis of language to find patterns that show subordination rather than community); Goldspink, *supra* note 35 (using linguistic coding to demonstrate patterns consistent with coordination rather than empathy).

An alternative explanation relies on self-selection. Under Clay Shirky's theory, the human capacity to make "economically irrational but socially useful calculations" can be tapped to generate both individual motivation and mass collaboration.[38] Shirky points to individuals' desire to exercise "unused mental capacities" for the "pleasure of changing something in the world."[39] Essentially, this theory combines a latent individual preference for expression with a kind of altruism: Wikipedia is "set up to allow anyone who wants to edit an article to do so, for any and all reasons except getting paid."[40] When it comes to coordination, Shirky also relies on altruism. For Shirky, Wikipedia "exists . . . as an act of love."[41] If there is dissent, the community can get past it, just as "loving someone doesn't preclude arguing with them."[42]

This theory also is problematic because it does not offer an answer for why bad users don't exhaust the "loving" capabilities of good users. Jonathan Zittrain has identified these "'moonbats'"[43] as posing a serious problem not just for Wikipedia, but a generative Internet generally.[44] Zittrain believes that Wikipedians have dealt with bad users by brute force, particularly by enlisting "a critical mass of Wikipedians who keep an eye on articles and quickly revert those that are mangled."[45] A more difficult problem is editors who would try to free-ride off of the site's good will to push their own agendas or even inaccuracies.[46] These free-riders can take several forms, from those who read but do not contribute in the most benign sense, to destructive vandals as the most extreme example. In the middle are those who contribute but who might push their own point of view at the expense of the site or who generate disruptive conflict with others; in some ways, they are more difficult to handle than pure vandals, who can simply be blocked. Zittrain, more than other commentators, seems to appreciate Wikipedia's need to head off a tragedy of the commons—individuals seeking to push their own agendas might make themselves collectively worse off by degrading the encyclopedia as a whole.

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[38] SHIRKY, *supra* note 12, at 134.

[39] *Id.* at 132.

[40] *Id.* at 133.

[41] *Id.* at 141.

[42] *Id.*

[43] Eric Raymond, the open source pioneer, has been quoted, accusing Wikipedia as being "infested with moonbats." William Safire, *Moobats and Wingnuts*, N.Y. TIMES MAGAZINE, Sept. 3, 2006, at 16.

[44] *See* ZITTRAIN, *supra* note 10, at 143–144.

[45] *Id.* at 137.

[46] *Id.* at 138–40 (describing problems with malicious, false edits to newspaper publisher John Seigenthaler's page and problems with politicians and businesses seeking to burnish their reputations by selectively editing Wikipedia pages).

But he echoes the claims of others that Wikipedia combats the marching trolls with a "communitarian" ethos and through "consensus" and a "light regulatory touch."[47] Certainly, that is what Wikipedia says it does. The question remains, though, what does it *actually do*? In the next Part, we answer that question by taking a close look at how Wikipedia resolves disputes between editors.

II. DISPUTE RESOLUTION ON WIKIPEDIA

Conflict is by definition critical to dispute resolution. On Wikipedia, however, conflict goes beyond dispute resolution; it is central to the community itself. In this Part, we explore how this conflict-centered community came to be. We do so using two seemingly diametrically opposed methods. We first step back into Wikipedia's "history" by following the listserv discussions that generated the dispute resolution system. We then take a quantitative approach, applying statistical analysis to a hand-collected data set of arbitration decisions. Our goal is to provide a nuanced portrait of how the dispute resolution system actually works.

A. *The History of Wikipedia's Dispute Resolution System*

Wikipedians were first organized through a posted exhortation to "[i]gnore all rules" in the way of improving the project.[48] The slogan was intended to appeal to those made "nervous and depressed" by regulation,[49] even though the site at the time posted, and still posts, a set of hortatory "rules to consider." Such "rules" consisted of a mix of practical tips for creating articles ("Always leave something undone," "Explain jargon," and "Integrate changes")[50] and norms for editing itself ("Avoid bias,"[51] "Give the author a chance," and "Delete patent nonsense").[52]

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[47] *Id.* at 142–46e (describing governance of Wikipedia).

[48] Timothy, The Early History of Nupedia and Wikipedia: A Memoir, Apr. 18, 2005, http://features. slashdot.org/article.pl?sid=05/04/18/164213&tid=95 [hereinafter *The Early History I*] (quoting Larry Sanger's memoir); RulesToConsider, http://web.archive.org/web/20010416035716/www.wikipedia.com/wiki/ RulesToConsider (last visited Feb. 18, 2009) [hereinafter *Rules*].

[49] *Rules*, *supra* note 48; *The Early History I*, *supra* note 48 (explaining that "rules to consider" were intended to be a temporary fix).

[50] *Rules*, *supra* note 48.

[51] *Id.* ("Avoid bias: Since this is an encyclopedia, after a fashion, it would be best if you represented your controversial views either (1) not at all, (2) on *Debate, *Talk, or *Discussion pages linked from the bottom of the page that you're tempted to grace, or (3) represented in a fact-stating fashion, i.e., which attributes a particular opinion to a particular person or group, rather than asserting the opinion as fact. Number (3) is strongly preferred.").

[52] *Id.*

Moral suasion enforced Wikipedia's early rules.[53] Even before the site went live, Larry Sanger, co-founder of Wikipedia,[54] anticipated that disputes might arise between expert and non-expert contributors to the site. Where the expert was writing about an area in his or her sphere of knowledge, Sanger hoped that other editors would "politely defer."[55] But in those "uncomfortable cases" where experts went "rogue," the fledgling encyclopedia faced a serious issue. On the one hand, the editor would need correction. On the other hand, the ultimate "goal is to keep the expert on board while making a convert to the policy." Sanger recommended that editors treat each other with "respect" while taking care to present those points of Wikipedia's policy that the rogue expert is violating in their best light.[56]

The "no rules" culture quickly spread to become part of how the burgeoning community identified itself.[57] Sanger explained:

> What I, and other Wikipedians, failed to realize is that our initial anarchy would be taken by the next wave of contributors as the very essence of the project—how Wikipedia was "meant" to be—even though Wikipedia could have become anything we the contributors chose to make it.[58]

Since the community's policies were not concrete, there could be no formalized dispute resolution process. Disputes were resolved by consensus. One such early dispute arose between Sanger and "The Cunctator," an editor who believed that the project should be both more open and anarchic.[59] When

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[53] *The Early History I*, *supra* note 48 ("At the time, I [Larry Sanger] had enough influence within the community to get these policies generally accepted. And if we had not decided on these restrictions, Wikipedia might well have ended up, like many wikis, as *nothing in particular*. But since we *insisted* that it was an encyclopedia, even though it was just a blank wiki and a group of people to begin with, it became an encyclopedia. There is something very profound about that.").

[54] This credit is disputed by Wales. *Compare* Larry Sanger, My Role in Wikipedia, http://www. larrysanger.org/roleinwp.html (last visited Feb. 18, 2009) (describing Larry Sanger as a co-founder of Wikipedia), *with* Talk: Jimmy Wales, http://en.wikipedia.org/w/index.php?title=Talk:Jimmy_Wales&diff= prev&oldid=154297650 (last visited Feb. 18, 2009) ("I [Jimmy Wales] am the sole founder of Wikipedia. It is deeply inappropriate for Wikipedia to take a stand on this point of controversy. Please revert to the longstanding compromise version on this point. And I think it is time to start warning the trolls who keep doing this.").

[55] Deferring to the Experts, Jan. 3, 2001, http://meta.wikimedia.org/wiki/Deferring_to_the_experts.

[56] *Id.*

[57] *See* Wikipedia Talk: Ignore All Rules/Archive 1, Comment of NetEsq, http://en.wikipedia.org/wiki/ Wikipedia_talk:Ignore_all_rules/Archive_1 (last visited Feb. 15, 2009) ("[T]his rule [the "no-rules" paradox] is the essence of Wikipedia, as it reflects the axiomatic supremacy of the individual.").

[58] *The Early History I*, *supra* note 48.

[59] Poe, *supra* note 15, at 92, *available at* http://www.theatlantic.com/doc/200609/wikipedia/4.

Sanger, in November 2001, requested that he be given "fairly broad authority by the community—by you, dear reader—if I am going to do my job effectively," Cunctator and others resisted, and Sanger left the site.[60] He has since commented:

> *It is one thing* to lack any equivalent to "police" and "courts" that can quickly and effectively eliminate abuse; such enforcement systems were rarely entertained in Wikipedia's early years, because according to the wiki ideal, users can effectively police each other. *It is another thing altogether* to lack a community ethos that is unified in its commitment to its basic ideals, so that the community's champions *could* claim a moral high ground. So why was there no such unified community ethos and no uncontroversial "moral high ground"? I think it was a simple consequence of the fact that the community was to be largely self-organizing and to set its own policy by consensus. Any loud minority, even a persistent minority of one person, can remove the appearance of consensus.[61]

By the time Wales transferred ownership of the site to a nonprofit foundation in June 2003, the community had grown significantly.[62] And yet, despite this increasing level of complexity, the site's dispute resolution system was undeveloped. Although hints had appeared of a mentoring system intended to reduce tensions between users,[63] ultimately decision-making power was left to Jimmy Wales. His prestige ultimately gave him the persuasive force to dispose of arguments between others. But he was dissatisfied with this role.[64]

> The bottom line is that I think that in the future, not right away, but after we've slowly taken some cautious steps towards organically creating some more 'collective' decision making methods (voting,

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[60] *Id.* (suggesting The Cunctator "advocated a combination of anarchy (no hierarchy within the project) and radical openness (few or no limitations on contributions)").

[61] The Early History of Nupedia and Wikipedia, Part II, Apr. 19, 2005, http://features.slashdot.org/article. pl?sid=05/04/19/1746205&tid=95.

[62] *See* Wikipedia: Modelling Wikipedia's Growth, http://en.wikipedia.org/wiki/Wikipedia:Modelling_ Wikipedia%27s_growth (last visited Mar. 2, 2009) (displaying an "old model" of Wikipedia's growth rate, and noting a spike in 2003).

[63] One early editor suggested that "Wikipedia is not the forum for axe-grinding or debating contemporary research." Deferring to the Experts, *supra* note 55. Another suggested that "there should be some mechanism to prevent reversion wars and the like—I just don't know how that would work without making LS look like a dictator in some people's eyes, or adding fuel to the idea that there are cliques and cabals at work." *Id.*

[64] He "want[ed] to be on record as a critic of this method who only grudgingly accepts that it's the best way that we have right now." *See* posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-I (Sept. 25, 2003), http://markmail.org/message/my5ckgkn7n24474o (e-mail entitled "Re. Banning processus [sic]").

that sort of thing), we will move towards a system of banning that's very different from what we have now.[65]

The formative stages of a formalized system began on the mailing lists in early October, 2003. The discussion began when talking about "Wikiquette," the principles for dealing with other editors. One mailing list participant wrote:

> In my opinion, we need to set clearer rules on Wikiquette and be serious about enforcing them, with a well-defined protocol of warning, temporary banning, permanent banning, etc. Maybe there could be a 5–10 member Wikiquette "committee" where violations could be reported and decisions would be made by voting.[66]

Jimmy Wales passed this e-mail along to the Wikipedia user listserv to "open the floor to a discussion."[67] Alex T. Roshuk, a 47-year-old Canadian-educated solo-practice lawyer from Brooklyn, New York responded.[68] Within thirty minutes of Wales's e-mail, Roshuk had written a 1,300-word response detailing his vision of Wikipedia mediation and arbitration processes and framed them as "very simplified version[s] of the commercial or international arbitration programs of the American Arbitration Association."[69] Roshuk explained that the main advantage of arbitration was that it would

> allow[] the parties to vent and get their disputes off their chests withou[t] the fear that somehow what they say will be used against them. The ideal is that by communicating (through a third party that is trained in conciliation and compromise) that the parties actually understand each other better . . . .
>
>   . . . .
>
>   . . . [It] would calm things down and once people complained the process would not consume everyone's time the way it is doing now.
>
>   [Wales] would still have his foothold . . . which he could use for temporary restraining bans or in extreme cases where the CATBO

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[65] *Id.*

[66] Posting of Erik Moeller, erik_moeller@gmx.de, to org.wikimedia.lists.wikien-I (Oct. 2, 2003), http://markmail.org/message/37a7a6ycdamfodk4.

[67] Posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-I (Oct. 2, 2003), http://markmail.org/message/otszuqolh5q6la2f#query:+page:1+mid:745jswrdppzhd2qi.

[68] Posting of Alex R., alex756@nyc.rr.com, to org.wikimedia.lists.wikien-I (Oct. 2, 2003), http://markmail.org/message/xuuhqtu2dlpfegdy (Oct. 2, 2003); *see also* Law Office of Alex T. Roshuk, www.roshuklaw.com (last visited Aug. 29, 2009).

[69] *Id.*

[the proposed Committee] is engaging in serious destructive activity. [H]e could also be appealed to . . . overturn a particularly harsh decision by the arbitrators or unbanning . . . .[70]

In response to this proposal, Daniel Ehrenberg protested that "Wikipedia's goal is to make an encyclopedia, not a judicial system."[71]

But the law's shadow—actual and fanciful—loomed large over the early discussions about the kind of dispute resolution system Wikipedians wanted to create. Many discussion participants wished to avoid lawsuits from disgruntled users.[72] They believed, wrongly, that these disgruntled users might have some kind of action against Wikipedia for not permitting them to write the article of their choice.[73] It was thought that a highly legalized dispute resolution system, enforced through a contract each user would agree to, would provide protection against such property-based claims, while also protecting the site itself from third-party libel actions.[74] To the concern that the site's dispute resolution system might create public rights—in retrospect, fanciful— Jimmy Wales tartly responded:

> My concern here is that people will be so intimidated by the notion that if we don't do arbitration just right, according to some complex legal rules, a judge is likely to overturn it and require us

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[70] *Id.*

[71] Posting of Daniel Ehrenberg, littledanehren@yahoo.com, to org.wikimedia.lists.wikien-I (Oct. 2, 2003), http://markmail.org/message/cmvtn24dbodsq5qi.

[72] The fear of libel, for example, had been discussed on the Wikimedia list as early as March 2003. *See* Posting of Sheldon Rampton, Sheldon.rampton@verizon.net, to org.wikimedia.lists.wikien-l (Mar. 25, 2003), http://markmail.org/search/?q=libel#query:libel%20list%3Aorg.wikimedia.lists.wikien-l%20from%3A%22 Jimmy%20Wales%22%20date%3A200303%20+page:1+mid:q4dotjxd57vl2p7n+state:results (raising the question of when Wikipedia would be responsible for users' libel). Libels suits against individual editors are exceedingly rare. For one recent example, see Ed Brayton, *Grebner Files Libel Suit over Wikipedia Edits*, THE MICHIGAN MESSENGER (July 8, 2009), http://michiganmessenger.com/22336/grebner-files-libel-suit-over-wikipedia-edits.

[73] *See* Posting of Alex R., alex756@nyc.rr.com, to org.wikimedia.lists.wikien-I (Oct. 4, 2003, 22:12:54), http://markmail.org/message/pcxxq6ibrlckxw5q#query:+page:1+mid:n74d65bt4hjtwuxh+state:results ("[B]y creating an arbitration system you are giving a banned user the possibility of submit[t]ing such a decision to a court of competent jurisdiction to review and either set aside the arbitration decision or to confirm it . . . ."); posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-I (Oct. 28, 2003, 14:04:02), http://markmail.org/message/pcxxq6ibrlckxw5q#query:+page:1+mid:f2ltjq3njwkgnpnv+state:results ("Anyhow, editing the website is always a privilege generously extended, but no one has a right to edit the website, period. . . . 'Arbitration' has to be understand [sic] in light of that, it [cannot] create new legal rights for random users that they don't already have. If someone ever did decide to appeal an arbitration or banning decision of any kind to a court, then, they'd basically be wasting their time.").

[74] Posting of Stevertigo, utilitymuffinresearch2@yahoo.com, to org.wikimedia.lists.wikien-I (Oct. 3, 2003), http://markmail.org/message/pcxxq6ibrlckxw5q.

to reinstate someone. It's pretty easy to make sure that doesn't happen.

    We have the legal right to be as stupid and arbitrary and unfair with our procedures as we like. (Of course we shouldn't do that!).[75]

Wales ultimately followed Roshuk's general plan, asking for volunteers for the mediation and arbitration committees. He made arbitration and mediation committee assignments on December 4, 2003, with a January 1, 2004, effective date to give "the rest of this month to argue about what the hell all this means."[76]

The exact structure of the arbitration process remained unclear. The major sticking points were:

> 1. Should parties be represented? (Ultimately, the site decided against representation as a norm);
>
> 2. Should the Arbitration Committee be elected?[77] The planning committee was worried about politics and bureaucracy.[78] (Today, the Arbitration Committee consists of sixteen elected representatives);
>
> 3. Which kinds of disputes would the Committee have jurisdiction to hear?[79] Very quickly, the planning committee decided against hearing disputes based on the "truth" of the article in question.[80]

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[75] Posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-l (Oct. 28, 2003, 14:10:27), http://markmail.org/message/pcxxq6ibrlckxw5q#query:+page:1+mid:vgsdn33qrjxv5o3q+state: results.

[76] Posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-l (Dec. 4, 2003), http://markmail.org/message/komcldyapats43xj.

[77] Posting of Dan Drake, dd@dandrake.com, to org.wikimedia.lists.wikien-l (Jan. 24, 2004), http://markmail.org/message/fw3j4gdn6a4cq3bd (describing issues relating to the election of arbitrators).

[78] Posting of Delirium, delirium@rufus.d2q.com, to org.wikimedia.lists.wikien-l (Jan. 24, 2004), http://markmail.org/message/l37x7a56e3nzt2oc.

[79] Posting of Martin Harper, martin@myreddice.freeserve.co.uk, to org.wikimedia.lists.wikien-l (Jan. 23, 2004), http://markmail.org/message/ykmmz6ckop7iho67.

[80] Posting of Sean Barrett, sean@epoptic.org, to org.wikimedia.lists.wikien-l (Jan. 23, 2004), http://markmail.org/message/2ti2ykmabciuvqku; posting of Sascha Noyes, sascha@pantropy.net, to org.wikimedia.lists.wikien-l (Jan. 23, 2004, 12:47:38), http://markmail.org/message/cffilsffdfrt725m; posting of Sascha Noyes, sascha@pantropy.net, org.wikimedia.lists.wikien-l (Jan. 25, 2004), http://markmail.org/message/4nrnspfjxtnlhdwb; posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-l (Jan. 26, 2004), http://markmail.org/message/y3sfov2vpcpnbcv6.

>   Instead, the arbitrators would handle deviations from appropriate
>   personal conduct and the site's etiquette of neutrality;[81]
>
> 4. Should the Committee's decisions have precedential effect?
>   (The ultimate answer was no.); [82]
>
> 5. Others mulled over whether the arbitral panel should permit
>   evidence of prior bad acts on other sites,[83] (yes) and whether
>   Wales would retain ultimate authority to overturn the
>   Committee's decisions.[84] (In theory, no.).

At the same time, users debated whether and how to constitute a mediation system that would precede or complement adjudication. Mediation was seen as advantageous because it was less like "law"—individuals could talk about issues without fear of precedent,[85] and thus, some individuals would be more likely to participate in the system.[86] Finally, users proposed several different alternatives, including "an escalating set of warning levels, like DEFCONs (or to be more crude, seven stages of hell)."[87]

Although they missed the January 1, 2004 goal, Wales pushed through the procedures to make the Arbitration Committee functional on February 6, 2004.[88] The first arbitration case was decided on February 11, 2004, when the Committee held that an editor had "behaved inappropriately on a consistent and excessive basis." [89] The Arbitration Committee "'completed'" its

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[81] Posting of Sascha Noyes, sascha@pantropy.net, to org.wikimedia.lists.wikien-l (Jan. 23, 2004, 15:50:14), http://markmail.org/message/iuqwqvhp5kil7olq.

[82] Posting of Fred Bauer, fredbaud@ctelco.net, to org.wikimedia.lists.wikien-l (Jan. 27, 2004), http://markmail.org/message/cbjyme3qtqbmwn4u.

[83] Posting of Delirium, delirium@rufus.d2q.com, to org.wikimedia.lists.wikien-l (Feb. 8, 2004), http://markmail.org/message/kegi5y5onyxozf5t.

[84] Posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-l (Oct. 29, 2003), http://markmail.org/message/nidm4ibo3sdvno7x.

[85] Posting of Alex R., alex756@nyc.rr.com, to org.wikimedia.lists.wikien-l (Oct. 4, 2003, 00:03:36), http://markmail.org/message/2bkksqzpp2b5gro4.

[86] Posting of Ray Saintonge, saintonge@telus.net, to org.wikimedia.lists.wikien-l (Oct. 3, 2003), http://markmail.org/message/lfxpgipxcuta6wdy (proposing a mediation system that could recommend that users be banned).

[87] Posting of Andrew Lih, alih@hku.hk, to org.wikimedia.lists.wikien-l (Oct. 2, 2003), http://markmail.org/message/k4gdwn2ptxf5yry2.

[88] Wales further decided that though discussions would continue regarding the procedures of arbitration, in the interim, four committee votes (of eleven) would suffice to hear a case, and six would render a decision. Posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-l (Feb. 6, 2004), http://markmail.org/message/mcj36elspbn2b5d7.

[89] Wikipedia: Requests for Arbitration/Theresa Knott vs. Mr-Natural-Health, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/Theresa_knott_vs._Mr-Natural-Health (last visited Feb. 15, 2009).

guidelines on March 8, 2004.[90] Discussions continued on the new system's efficacy, with the website experimenting with community voting to ban users in April 2004.[91] Over the next month, the use of "quickpolls" grew. Because of the popularity of these quickpolls, Wales suggested that they be expanded to become the first step in dispute resolution, with the Arbitration Committee changing into a "Board of Appeals."[92] Despite some agreement, the proposal did not progress.[93] Further attempts to reform the dispute resolution system have similarly stagnated.[94]

B. Form: The Architecture of Wikipedia's Current Dispute Resolution

1. Talking to One Another

In its official dispute resolution policy, Wikipedia offers suggestions for avoiding the formal process altogether. The avoidance policy largely rehashes other official policies meant to discourage tension, including maintaining a neutral point of view (NPOV), avoiding simply "reverting" another's article—that is, restoring it to an earlier version and thus throwing out their edits[95]—and avoiding personal attacks.[96] In the event of a dispute, the first step in resolving "almost any conflict" is to discuss the issue on the "talk" page associated with the relevant article or the other user.[97] In so doing, editors are encouraged to "stay cool" and assume that others are acting in good faith absent "clear evidence to the contrary."[98] Significantly, Wikipedia's policy

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[90] Posting of Lee Pilich, lee@audiblerecords.com, to org.wikimedia.lists.wikien-I (Mar. 8, 2004), http://markmail.org/message/rnun62e4ub5bgxzi.

[91] Posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-I (Apr. 3, 2004), http://markmail.org/message/l5iitkstct4l5jnx.

[92] Posting of Jimmy Wales, jwales@joey.bomis.com, to org.wikimedia.lists.wikien-I (May 5, 2004, 06:24:00), http://markmail.org/message/zonxxd2folhn5aj5.

[93] Posting of Erik Moeller, erik moeller@gmx.de, to org.wikimedia.lists.wikien-I (May 5, 2004), http://markmail.org/message/s47cdx5ysck75ryh.

[94] Posting of Michael Snow, wikipedia@earthlink.net, to org.wikimedia.lists.wikien-I (Nov. 8, 2004), http://markmail.org/message/jhmgb2le7r47ew7d (proposing reforms to the Arbitration Committee); posting of Michael Snow, wikipedia@earthlink.net, to org.wikimedia.lists.wikien-I (Nov. 10, 2004), http://markmail.org/message/oiuzybamlsy6l4ve#query:+page:1+mid:qlpfmo5bdh7seb3m.

[95] Wikipedia: Edit War; The Three Revert Rule, http://en.wikipedia.org/wiki/Wikipedia:Three-revert_rule (last visited Aug. 29, 2009).

[96] Wikipedia: No Personal Attacks, http://en.wikipedia.org/wiki/Wikipedia:No_personal_attacks (last visited Feb. 15, 2009).

[97] Wikipedia: Resolving Disputes, http://si.wikipedia.org/wiki/Wikipedia:Resolving_disputes (last visited Feb. 15, 2009).

[98] *Id.*

ties the exhortation to talk to one another to later findings in the formal dispute resolution system:

> Both at this stage and throughout the dispute resolution process, talking to other parties is not simply a formality to be satisfied before moving on to the next forum. Failure to pursue discussion in good faith shows that you are trying to escalate the dispute instead of resolving it. This will make people less sympathetic to your position and may prevent you from effectively using later stages in dispute resolution.[99]

2. Requests for Comment

When talking fails, users are encouraged to extend to others a "request for comment" ("RfC"). This creates enormous pressure to settle disputes and is the "main avenue for [resolving] general disputes."[100] Each category of article (biographies,[101] politics,[102] etc.) has its own RfC page. On each page, a rotating set of incipient controversies is listed, and editors are invited to contribute their views on the dispute's resolution.

Wikipedia provides guidelines for RfC responders. They shall be "civil" and "assume good faith in other editors' actions."[103] They shall "[m]ediate where possible"[104] and educate users by referring to Wikipedia policy if necessary.[105] In addition to article disputes, RfCs are used to resolve user disputes. One RfC page exists for inappropriate usernames.[106] For example, both "confusing" and "promotional" usernames are considered inappropriate

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[99] Wikinews: Dispute Resolution, http://en.wikinews.org/wiki/Wikinews:Dispute_resolution (last visited Feb. 15, 2009).

[100] Wikipedia: Resolving Disputes, *supra* note 97.

[101] Wikipedia: Requests for Comment/Biographies, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_comment/Biographies (last visited Feb. 15, 2009).

[102] Wikipedia: Requests for Comment/Politics, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_comment/Politics (last visited Feb. 15, 2009).

[103] Wikipedia: Requests for Comment, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_comment (last visited Feb. 15, 2009).

[104] *Id.* This is distinct from the more formal approaches to mediation on Wikipedia, the "Mediation Cabal," and formal mediation.

[105] *Id.*

[106] Wikipedia: Requests for Comment/User Names, http://en.wikipedia.org/wiki/Wikipedia:RFCN (last visited Feb. 15, 2009).

under official Wikipedia policy. [107]   Another RfC page exists for user misconduct.[108]

3. *Editor Assistance*

Running parallel to the RfC system is a one-off request for assistance from a cadre of dispute resolution specialists.[109] Volunteer editors post a brief statement specifying the type of help they can provide. For example, an editor posts, "I am able and willing to help with image and copyright related questions. Contact on my or your talk page is preferable, though e-mail or an instant messenger is an option."[110] Another writes that he is "[r]easonably experienced in dealing with edit wars and the dispute resolution process."[111] A general query (and answer) takes this form:

> **User:** My page—http://en.wikipedia.org/wiki/Analysis_Group— was tagged as "reading like an advertisement", which complaint I don't understand. What can I do to make this article fit protocol? Thanks. . . .
>
> **Assisting Editor**: The history shows that you have not contributed to Analysis Group. Indeed, this is your only edit (notwithstanding any deleted articles, obviously). And you should not refer to any page as "my page". Have a look at style guides . . . and the featured articles to better gauge good quality formal encyclopaedic writing.[112]

Wikipedia also offers an unofficial and informal process for resolving disputes between two editors by using third-party volunteer editors, sometimes known as "Third Opinion Wikipedians." [113] Wikipedia provides several guidelines for those issuing "Third Opinions."   They should read the arguments, avoid reckless opinions, be civil and nonjudgmental, offer neutral

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[107] Wikipedia: Username, http://simple.wikipedia.org/wiki/Wikipedia:Username (last visited Feb. 15, 2009).

[108] Wikipedia: Requests for Comment/User Conduct, http://en.wikipedia.org/wiki/Wikipedia:Conflicts_between_users (last visited Feb. 15, 2009).

[109] Wikipedia: Editor Assistance, http://en.wikipedia.org/wiki/Wikipedia:Editor_assistance (last visited Feb. 15, 2009).

[110] *Id.* (user Iamunknown).

[111] *Id.* (user Philknight).

[112] Wikipedia: Editor Assistance/Requests/Archive 4, http://en.wikipedia.org/wiki/Wikipedia:Editor_assistance/Requests/Archive_4 (last visited July 9, 2009).

[113] Wikipedia: Third Opinion, http://en.wikipedia.org/wiki/Wikipedia:Third_opinion (last visited Feb. 15, 2009).

opinions, and monitor the page after offering an opinion.[114] A requestor provides a brief summary of the dispute on the Third Opinion page, which is found under a separate heading from the original dispute,[115] and links to the talk page of the article.[116]

4. *Wikiquette Alerts*

Wikiquette Alerts "is a non-binding noticeboard where users can report impolite, uncivil or other difficult communications with editors, to seek perspective, advice, informal mediation, or a referral to a more appropriate forum."[117] Wikipedia's etiquette guidelines form a foundation for judging impolite or uncivil behavior.[118] As with the Third Opinion procedure, anyone can respond to Wikiquette Alerts. Moreover, the Wikiquette Alerts page explicitly seeks those who have benefitted from the process to contribute to another alert. As with the prior stages, conduct is an important touchstone.

5. *Mediation*

The Mediation Committee organizes formal mediation and is charged with building consensus about content where possible.[119] A Wikipedia mediator "facilitates the reaching of consensus on a disputed issue by two or more editors by guiding and regulating structured discussion."[120] The structure of mediation is left completely to the mediator.[121]

There are loose guidelines for mediation participants. Any disputant, whether alone or part of a group, can withdraw from the mediation process at will. Withdrawal ends the current mediation process. If only part of a group withdraws, the remaining parties cannot continue the current mediation.

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[114] *Id.*

[115] For example, a Third Opinion was requested in deciding whether Maryland Fried Chicken, a fried chicken chain, and Kentucky Fried Movie, a film, belonged in the "See also" section of the article on KFC, the fast-food restaurant. Wikipedia: Third Opinion, http://en.wikipedia.org/w/index.php?title=Wikipedia:Third_opinion&oldid=143513257 (last visited Feb. 15, 2009).

[116] Wikipedia: Third Opinion, *supra* note 113.

[117] Wikipedia: Wikiquette Alerts, http://en.wikipedia.org/wiki/Wikipedia:Wikiquette_alerts (last visited Feb. 15, 2009).

[118] The guidelines, found at Wikipedia: Etiquette, http://en.wikipedia.org/wiki/Wiki_etiquette (last visited Aug. 20, 2009), are not official policy.

[119] Wikipedia: Mediation, http://en.wikipedia.org/wiki/Wikipedia:Mediation (last visited July 9, 2009).

[120] *Id.*

[121] *Id.* By contrast, the Mediation Cabal is an unofficial group of volunteers providing informal mediation. Wikipedia: Mediation Cabal, http://en.wikipedia.org/wiki/Wikipedia:Mediation_Cabal (last visited Feb. 15, 2009).

Rather, they must resubmit for a new mediation. In all cases, disputants who withdraw are warned that the action may be escalated to arbitration.

To request mediation, the disputer must pose his issues in the form of questions for the mediator to resolve.[122] Both parties to the dispute must agree to proceed.[123] For this reason, mediation generally does little to resolve particularly contentious disputes and is often criticized by members of the Wikipedia community as a failed system.

6. *Arbitration*

Where the Arbitration Committee may generate norms, its concrete task is to rule in specific cases.[124] In its rulings, the Arbitration Committee often elaborates on how Wikipedians should think of their guiding principles, especially NPOV. This potentially fleshes out social norms. However, the Committee also rules against particular parties and sets forth concrete rules about how those parties should behave. Those rules in turn are enforced by the larger Wikipedia community, in particular the more than 1,500 administrators. At the extreme, the Arbitration Committee can actually ban individuals from participation on all or part of the site. As a result, the Committee can achieve the goal of conflict resolution, within reasonable limits, in significant part by exiling the unreasonable party or by sending forth a republic of judges to watch for and punish future conduct.

The procedures for electing the Arbitration Committee elections and amending its policies remain undefined. However, member terms are set as three years.[125] As of July 2009, there were fourteen active members of the Committee, and three inactive members. There are thirty-nine former members of the Committee.[126] Arbitrators are not required to divulge any personal information about themselves to each other or to the public. They

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[122] *See* Wikipedia: Requests for Mediation, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_mediation (last visited July 9, 2009).

[123] *See* Wikipedia: Requests for Mediation/Common Reasons for Rejection, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_mediation/Common_reasons_for_rejection (last visited July 9, 2009).

[124] *See* e-mail from Mark Pellegrini, member of Arbitration Committee, to David Hoffman, Associate Professor of Law (Aug. 6, 2007) (on file with authors) ("Arbcom decisions are inherently a pragmatic affair[]. The actions we take are designed to ensure our articles get better.").

[125] Wikipedia: Arbitration Committee, http://en.wikipedia.org/wiki/Wikipedia:Arbitration_Committee (last visited Feb. 15, 2009).

[126] Wikipedia: Arbitration Committee/History, http://en.wikipedia.org/wiki/Wikipedia:Arbitration_Committee/History (last visited July 9, 2009).

have the power to hold evidence secret "in exceptional circumstances."[127] Anyone can submit a case for arbitration, but only cases where the majority of the Committee (or a net vote of four or more) agrees will be accepted.[128] In addition, there are six clerks on the Arbitration Committee,[129] who are responsibile for opening and closing cases when the requisite number of votes are cast; publishing final decisions; and keeping the arbitration request pages organized. This work is non-trivial, given that as of December 31, 2008, there were 373 completed arbitration cases.[130]

C. Function: Dispute Resolution in Practice

In previous sections, this Article has provided a general description of Wikipedia's dispute resolution system. We now supplement that description with an original analysis of a hand-collected data set of the Arbitration Committee's published decisions. In particular, we show how the Arbitration Committee tries to coordinate the behavior of individual participants by regulating their conduct through particular remedies and punishments. However, some readers might worry that our focus on the arbitration panel's decisions, instead of on the entire universe of dispute resolution on Wikipedia, will mislead.

One aspect of this critique is less relevant for Wikipedia than it is offline. Unlike the decisions of judges, all of the Arbitration Committee's decisions are available.[131] Similarly, unlike offline dispute resolution, settlement is exceptionally rare once the parties have decided to begin formal proceedings,[132] and there is no resulting issue of selection bias in the universe

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[127] The Committee's propensity to resolve matters behind closed doors was an issue in the 2008 Committee elections. Two incumbent arbitrators were "soundly defeated" as "[m]any people [were] of the opinion that the 2008 ArbCom was too opaque, hearing too many matters in private." As a result, the new members of the Committee were charged to avoid private rulemaking. Usertalk: Jimbo Wales, ArbCom Appointments, http://en.wikipedia.org/w/index.php?title=User_talk:Jimbo_Wales&oldid=259248025 (last visited July 9, 2009).

[128] A vote to reject or decline a case subtracts one from the total number of votes to accept a case. *See* Wikipedia: Arbitration/Guide to Arbitration, http://en.wikipedia.org/wiki/Wikipedia:Arbitration/Guide_to_ arbitration (last visited Aug. 21, 2009).

[129] Wikipedia: Arbitration Committee/Clerks, http://en.wikipedia.org/wiki/Wikipedia:Arbitration_ Committee/Clerks (last visited Feb. 15, 2009).

[130] Wikipedia: Arbitration/Index/Cases, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/ Completed_requests (last visited Aug. 21, 2009).

[131] *Cf.* David A. Hoffman et al., *Docketology, District Courts, and Doctrine*, 85 WASH. U. L.R. 681, 685 (2007) (citing study of trial court dockets showing a significant portion of substantive legal work occurs in trial court decisions that are not fully explained).

[132] We identified only eleven cases out of 283 that were dismissed for lack of evidence or which settled.

of Wikipedia arbitration cases.[133]   On the other hand, there is tremendous dispute resolution happening at "lower" levels of Wikipedia's system.   For example, individuals who fight about the content of an article may resolve their dispute simply by talking to one another, or by asking an outside party to help them mediate.   Because those discussions are publicly available, researchers will be able to fruitfully analyze them in future projects.

A different objection relates to the *influence* of the Arbitration Committee. Perhaps the relatively small number of arbitration decisions does not affect the much larger set of informally resolved conflicts and the yet larger universe of user behavior.   The tortured link between the written law and its theoretical or actual influence is not a problem unique to this context.[134]   However, there *is* evidence that the existence and activity of the Arbitration Committee has influenced the design of formal policies on banning users and disruptive editing that the sites' administrators and ordinary users rely on.[135]   Indeed, members of the Committee themselves believe that continued use and expansion of lower-level dispute resolution systems is what has enabled the site to scale despite a relatively low number of arbitration cases.[136]

Finally, our analysis makes a contribution because it focuses on those aspects of Wikipedia's dispute resolution which are shared broadly and

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[133]   *Cf.* George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984) (addressing the high occurrence of selection bias in litigated disputes).

[134]   *Compare* Randy E. Barnett, *Constitutional Legitimacy*, 103 COLUM. L. REV. 111, 116 (2003) ("[M]ost citizens think that when a command is called a 'law,' it carries with it a moral duty of obedience. . . ."), *with* JOSEPH RAZ, *The Obligation to Obey the Law*, *in* THE AUTHORITY OF LAW: ESSAYS ON LAW AND MORALITY 233, 233 (1979) ("[T]here is no obligation to obey the law. . . . [T]here is not even a prima facie obligation to obey it. . . . [T]here is no obligation to obey the law even in a good society whose legal system is just." (footnote omitted)).

[135]   The creation of guidelines for lower-level remedies to resolve conflict was apparently contemporaneous with our case set.   *See* posting of Lise Broer to Durova: The Wiki Witch of the West, http://durova.blogspot.com/2009/03/wikitruth-through-wikiorder.html (Mar. 19, 2009, 15:42) (reviewing an earlier draft of this Article and observing that "[t]he period January 2005 through Septem[b]er 2007 was a critical one in Wikipedia's development of community-based remedies . . .").   *See also* Wikipedia: Disruptive Editing, http://en.wikipedia.org/w/index.php?title=Wikipedia:Disruptive_editing (last visited Aug. 21, 2009) (detailing Wikipedia's "disruptive editing" guidelines, situated within the context of possible arbitration); Wikipedia: Banning Policy, http://en.wikipedia.org/w/index.php?title=Wikipedia:Banning_ (last visited Aug. 21, 2009) (explaining Wikipedia's "banning policy" guidelines, situated within the context of possible arbitration).   The archived online discussions surrounding this drafting also show their design in tandem with the then recently-created "Arbcom."   *See, e.g.*, Wikipedia Talk: Banning Policy/Archive 1, http://en.wikipedia. org/wiki/Wikipedia_talk:Banning_policy/Archive_1 (last visited June 14, 2009) (listing archived past discussions regarding the "banning policy").

[136]   *See* e-mail from Steve Dunlop, member of the Arbitration Committee, to David Hoffman, Associate Professor of Law, Temple University Beasley School of Law (Aug. 6, 2007) (on file with authors).

publicly with the community of users. That is, much like studying appellate opinions, our work on Wikipedia's arbitral rulings is the study of formalized "doctrine," which may create its own reality. As noted empiricists Theodore Eisenberg and Sheri Johnson explain, legal opinions are often thought of as representative because "they are the full population . . . of the cases shaping perceptions of the legal system. Published opinions are all most of us ever work from."[137]

1. The Data

We collected 283 decisions resolved from January 10, 2005, to September 10, 2007.[138] Of these, only a handful of cases remained unresolved when the Committee terminated its review. Eleven were dismissed for lack of evidence or settled; one was resolved in secret; one was mooted; and two were consolidated.[139] We were left with 268 decisions.[140]

With the help of its clerks, the Committee organizes its decisions, which are published on the Web, into Sections.[141] Each decision lists the parties and describes the issues according to the parties, as submitted for arbitration.[142] Each decision reports how the Committee voted on whether to take the case. (At least four Committee members must vote to accept jurisdiction.)[143] Each decision also reports any temporary remedy imposed by the Committee.[144] The Committee's "Final Decision" consists of four parts.

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[137] Theodore Eisenberg & Sheri Lynn Johnson, *The Effects of Intent: Do We Know How Legal Standards Work*, 76 CORNELL L. REV. 1151, 1195 (1991).

[138] The case sample is available with the authors. It was collected in the following way: Wikipedia lists closed arbitration cases at Arbitration/Index/Cases, *supra* note 130. This page provides links to the arbitrators' opinions for each case in which a request has been granted and the case has been closed. Every case during the time period in question was printed and placed in a separate folder with a case number, ranging from 1 to 283.

[139] Printouts of the cases in the set, and a database identifying them, are on file with the authors.

[140] As noted, fifteen cases were removed from the set for various reasons that made them dubious examples of discrete, public, final opinions. Subsequently, a team of coders, including the authors and fourteen students read through the case in each folder and systematically tabulated the parties' identities, the conduct that the arbitrators found had occurred, and the remedies the arbitrators issued.

[141] The clerks organize and maintain the opinions (online) and the list of opinions of the arbitration decisions. Wikipedia: Arbitration Committee/Clerks, http://en.wikipedia.org/wiki/Wikipedia:AC/C (last visited Feb. 15, 2009).

[142] The closest analogy would be a "statement of the case" from the beginning of an appellate brief.

[143] *See* Wikipedia: Arbitration/Policy, http://en.wikipedia.org/wiki/Wikipedia:Arbitration_policy (last visited Feb. 15, 2009) ("The request must have four net votes to accept, or have an absolute majority of arbitrators voting to accept.").

[144] For example, the Committee may vote to temporarily lock down an article on which the dispute centers.

First, the Committee sets out the general "Principles" that guided the resolution of the case. A typical example is the statement, "Decorum":

> Wikipedia users are expected to behave reasonably, calmly, and courteously in their interactions with other users; to approach even difficult situations in a dignified fashion and with a constructive and collaborative outlook; and to avoid acting in a manner that brings the project into disrepute. Unseemly conduct, such as personal attacks, incivility, assumptions of bad faith, trolling, harassment, disruptive point-making, and gaming the system, is prohibited.[145]

The Committee has compiled and posted a list of the Principles from all of its cases to date, which of course provides a source of Principles listed in later cases as well.[146] Some Arbitrators consider the Principles a kind of Wikipedia proto-Constitution.[147] However, in any individual case, the arbitrators take the position that they are not bound by precedent.[148]

Next, the Arbitrators list findings of fact about the conduct of the parties and the remedies (or punishments) to which they will be subjected. Conduct and remedy findings apply to each party individually, and each party's conduct and applicable remedy are voted on separately by the arbitrators. Furthermore, where a party is subject to multiple conduct allegations or remedies, each allegation or remedy is voted on by the arbitrators separately. For example, in one dispute, the Committee found that a particular user under review was using a new account to hide an old identity:

> SpinyNorman is likely User:JonGwynne, an editor who was the subject of two previous Arbitration cases . . . which placed him on probation for similar behaviors, including personal attacks and edit warring, and which ultimately resulted in him being banned from Wikipedia for 3 months.

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[145] Wikipedia: Requests for Arbitration/Homeopathy, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/Homeopathy#Decorum (last visited Feb. 15, 2009).

[146] Wikipedia: Arbitration/Index/Principles, http://en.wikipedia.org/wiki/Wikipedia:Arbitration/Index/Principles (last visited June 14, 2009).

[147] *See* E-mail from Mark Pellegrini, member of the Arbitration Committee, to David Hoffman, Associate Professor of Law, Temple University Beasley School of Law (Aug. 6, 2007) (on file with authors) (explaining the relationship between Constitutionalism and the Principles).

[148] *See* Wikipedia: Arbitration Committee Elections December 2007/Candidate Statements/Swatjester/Questions for the Candidate, http://en.wikipedia.org/wiki/Wikipedia:Arbitration_Committee_Elections_December_2007/Candidate_statements/Swatjester/Questions_for_the_candidate (last visited June 11, 2009) (explaining that "some degree of consistency is considered generally desirable," though "the Arbitration Committee is not bound by precedent").

Pass 5–0 at 14:08, 22 October 2006 (UTC).[149]

Despite the high level of granularity in the decision-making process, almost all findings and remedies are arrived at unanimously or by a substantial majority of Committee members.[150]

Finally, each decision discusses methods of enforcement, including ferreting out attempts at evasion through pseudonyms and alternate IP addresses. In doing so, the decision effectively "green-lights" the 1,500-plus administrators to "shoot on sight" to effect the arbitrators' rulings. For example, a decision about a continued debate over the article "Homeopathy" resulted in the immediate ban of user DanaUllman from Wikipedia for one year, and follow-on bans of suspected later pseudonyms Ronz, ScienceApologist, and Drpolich from editing the Homeopathy (and related) articles for shorter periods of time.[151]

For each decision, we coded the conduct and remedy findings,[152] as well as whether the parties were administrators.[153]

2. *Summary Statistics*

a. *Conduct Findings*

As we have described, the dispute resolution system was designed to focus on the parties' conduct rather than content. In our examination of its decisions, we did not find evidence that the Arbitration Committee's practice diverges from that design. Each decision contains a list of conduct findings, which collectively create an empirical catalogue of anti-social manners. There are over thirty distinct ways to irritate other Wikipedia users, including being uncivil, disruptive, or tendentious; researching the wrong way; attacking the

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[149] Wikipedia: Requests for Arbitration/Honda S2000, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/Honda_S2000 (last visited Feb. 15, 2009) (citation omitted).

[150] We have learned from current and former arbitrators that this unanimity resulted from substantial consensus building behind the scenes for the "express purpose of creating the public appearance of unity." *See* E-mail from Steve Dunlop, member of the Arbitration Committee, to David Hoffman, Associate Professor of Law, Temple University Beasley School of Law (Mar. 5, 2009) (on file with authors). This development is, of course, quite akin to the early development of consensus building by common law appellate courts.

[151] *See* Wikipedia: Request for Arbitration/Homeopathy, *supra* note **Error! Bookmark not defined.** (listing bans resulting from editor misconduct).

[152] We did not separately code for the Principles (the general policies) the Committee noted in each case discussion.

[153] In theory, we could have coded more information about specific parties, including the length of time they had spent editing Wikipedia, but that data would likely be unreliable.

gender or race of others; failing to follow the NPOV policy; and failing to respect rulings of the governing volunteers, including rulings of the Committee itself.

For simplicity, we have grouped these duplicative, vexatious findings into six categories. We list them in order from most to least common:

- *Anti-social*: In every community, there is some mechanism for sanctioning members who act in anti-social ways and behave in a manner unconnected with the community's productive mission. Similarly, on Wikipedia, individuals who are disruptive, discourteous, and uncivil are brought to the arbitral forum in large numbers. This category also includes editors who bluster about threats of legal action; those who make homophobic, ethnic, racial or gendered attacks; and those who are stalkers, harassers, and vandals. Anti-social conduct is by far the most common type of conduct finding made by the Committee—our analysis identified such behavior in 174 cases (65% of the sample).

- *Anti-consensus*: Achieving consensus is an important organizing principal in the Wikipedia community. It is about "how editors work with others" and is the "fundamental model for editorial decision-making" on Wikipedia. [154] Wikipedians undermine the goal of consensus when they engage in "editwars" and "revertwars," which involve continually editing articles rather than listening to others' suggestions. For example, Wikipedians are expressly prohibited from violating the three-revert rule (3RR), which generally forbids "more than three revert actions . . . on any one page within a 24 hour period . . . . [A] revert is any action . . . that reverses the actions of other editors, in whole or in part."[155] Administrators, too, can violate the policy by engaging in "wheelwars," which occur "when an administrator's action is reversed by another admin[istrator], but rather than discussing the disagreement, administrator tools are then used in a combative fashion to undo or redo the action." [156] Our analysis identified anti-consensus behavior in 125 cases (47% of the sample).

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[154] Wikipedia: Consensus, http://en.wikipedia.org/wiki/Wikipedia:Consensus (last visited Feb. 15, 2009).

[155] Wikipedia: Edit War, Three-Revert Rule, http://en.wikipedia.org/wiki/Wikipedia:Three-revert_rule (last visited Feb. 15, 2009).

[156] Wikipedia: Administrators, http://en.wikipedia.org/wiki/Wikipedia:Wheel_war (last visited Aug. 22, 2009).

- *Violations of Editing Policies:* Wikipedia has a long list of policies regarding how to appropriately edit articles. The most famous is the NPOV policy, which holds that "Wikipedia articles and other encyclopedic content must be written from a *neutral point of view*, representing fairly, and as far as possible without bias, all *significant* views that have been published by reliable sources."[157] Other policies include a prohibition on using copyrighted images, instructions not to edit subjects in which one has a personal stake, guidelines regarding research and citation, and a guideline to edit cooperatively to achieve consensus.[158] Our analysis identified editing violations in 111 cases (42% of the sample).

- *Impersonation:* Users on Wikipedia are identified by self-generated handles. This creates the potential for mischief. Editors may create multiple accounts and advance points of view that they do not wish to identify with their own agendas. For example, a corporation's publicist may create an account, appearing to belong to a neutral citizen, and then edit the corporation's article to portray it in a more flattering light.[159] The community at large, however, retains some ability to identify individuals that misuse handles in this way, using technological means, such as tracing IP addresses, as well as more human intelligence-based detection, such as identifying similarities of ideas and language. On Wikipedia and elsewhere, this kind of abuse is called "Sockpuppetry."[160] Users may also enlist others—confederates from the offline world—to edit in collaboration with them. This is called "Meatpuppetry." [161] Our analysis identified impersonation violations in 75 cases (28% of the sample).

- *Contempt*: Some individual users seek to evade the decisions of the Arbitration Committee or other organs of the Wikipedia dispute

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[157] Wikipedia: Neutral Point of View, http://en.wikipedia.org/wiki/NPOV (last visited Feb. 15, 2009) (emphasis added).

[158] *See* Wikipedia, List of Policies, http://en.wikipedia.org/wiki/Wikipedia:List_of_policies (last visited Feb. 15, 2009) (defining several groups of policies, including "Behavioral" and "Content").

[159] *See* John Borland, *See Who's Editing Wikipedia—Diebold, the CIA, a Campaign*, WIRED, Aug. 14, 2007, http://www.wired.com/politics/onlinerights/news/2007/08/wiki_tracker?currentPage=all (discussing self-editing of Wikipedia entries by corporations like Diebold and Wal-Mart, and the Central Intelligence Agency).

[160] Wikipedia: Sock Puppetry, http://en.wikipedia.org/wiki/Wikipedia:Sock_puppetry (last visited Feb. 15, 2009).

[161] Wikipedia: Sock Puppetry, Meatpuppets, http://en.wikipedia.org/wiki/Wikipedia:MEAT#Meatpuppets (last visited Feb. 15, 2009).

resolution system; others seek to subvert polling systems by spamming them; yet others work to evade blocks of their IP addresses. All such actions show contempt for the community's authority and legitimacy. Our analysis identified contempt findings in 26 cases (10% of the sample).

- *Article Chaos:* Some articles can become ethnic or nationalist battlegrounds (such as the article on Taiwan); others have talk pages that degenerate into debates, rather than discussions on how to improve the text of the articles themselves. The Committee takes up cases to deal with such trouble spots, as a supplement to, or in the absence of, proceedings on individual editor wrongdoing. Our analysis identified article-wide chaos in 20 cases (7% of the sample).

b. Remedies

To coordinate individual participants' conduct, the Arbitration Committee uses actual remedies, not just moral suasion and the power of consensus. Like the conduct they address, these remedies come in different flavors. Starting with the least severe, the Arbitration Committee will sometimes formally *thank* editors for their work or their behavior in the editing process. Sometimes parties will be *referred back to mediation*. Individuals can be *cautioned* and warned to stop certain behaviors, and explicitly put on "probation" regarding their misconduct. Administrators have expanded powers to block and monitor those editors on probationary status.[162] Editors can also be *banned from articles* and from entire *topics*. The most extreme remedy available to the Arbitration Committee is a *ban from editing Wikipedia* for a period of time, usually a year. *Remedies against administrators* are less articulated and usually involve the loss of status or powers. In the figure below we describe the frequency of each remedy type.

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[162] Wikipedia: Editing Restrictions, http://en.wikipedia.org/wiki/Wikipedia:Editing_restrictions (last visited Feb. 15, 2009).
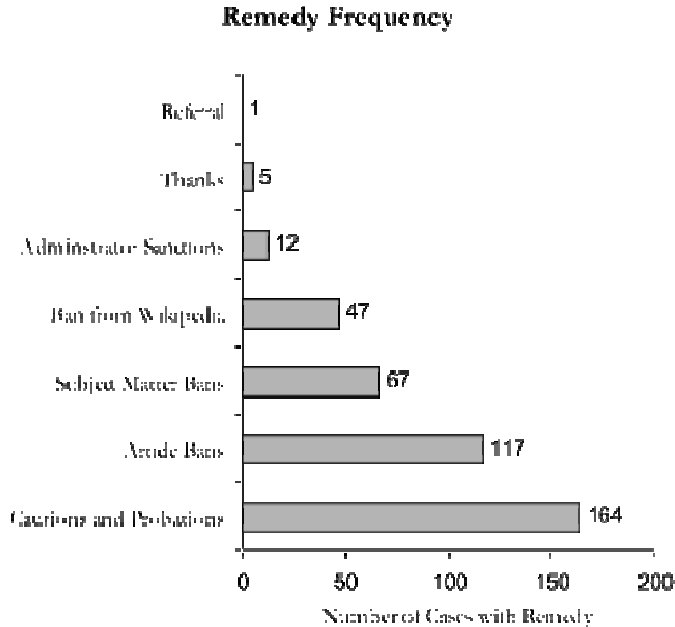
Remedy Frequency

Figure 1: Frequency of Remedy Findings

3. Inferential Statistics

a. Overview: Remedies as a Function of Conduct

Appreciating how conduct and remedies help generate order in Wikipedia requires an understanding of the relationship between conduct and remedy. An ordered logistic regression provides a straightforward way of doing this. We performed this test on those remedy types appearing in 10% or more of the cases[163] and display our results in the Appendix.

We will use predicted probabilities to turn these regression results into substantively informative predictions.[164] *Clarify*, a statistical application

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[163] For the "thanks," "referral," and "administrator" remedies, we have insufficient observations to create a stable model.

[164] There is a movement in the legal literature to make statistical results easier to comprehend. Lee Epstein and her coauthors have forcefully espoused the use of clear forms of analysis and presentation in empirical legal studies. *See generally* Lee Epstein et al., *On the Effective Communication of the Results of Empirical Studies, Part I*, 59 VAND. L. REV. 1811 (2006) (arguing that most law review articles would benefit from greater attention to the communication of their analytical results); Lee Epstein et al., *On the Effective*

designed by Harvard political scientist Gary King, enables this technique.[165] That is, *Clarify* would allow an analyst to answer the questions: "How likely is it that the Arbitration Committee will caution editors when the conduct findings are consensus, editing, and article chaos? What is that likelihood that only consensus is present?"[166]

Let us begin by imagining a very typical case in which the arbitrators have made certain conduct findings. Assume that because the case is so typical, those conduct findings are entirely average: there is a typical amount of consensus, editing, anti-social conduct, impersonation, etc. Using a statistical simulation based on key parameters including the regression coefficients and their standard errors, *Clarify* allows us to predict the likelihood that arbitrators will pursue each of the available remedies.

Focusing on those common remedies (i.e., those identified in more than 10% of the sample), as displayed in the figure below, *Clarify* predicts that there is a 16% chance that the "typical case" will result in the banning of a party from Wikipedia; a 23% chance that the arbitrators will impose a subject matter remedy; a 43% chance of an article ban; and a whopping 63% chance that the Arbitration Committee will caution the parties or impose paroles or probations. As figure 2 displays, around each percentage we can estimate a zone of uncertainty—the 95% confidence interval.[167]

Communication of the Results of Empirical Studies, Part II, 60 VAND. L. REV. 801 (2007) (arguing that more appropriate and accessible data presentations would enhance the impact of empirical legal scholarship regardless of the intended audience); *see also* Dan M. Kahan et al., *Whose Eyes Are You Going to Believe? Scott v. Harris and the Perils of Cognitive Illiberalism*, 122 HARV. L. REV. 837, 870 (2009) (explaining how Clarify helps with statistical simulations).

[165] *See* Kahan et al., *supra* note 164, at 870–71 ("Using Clarify, an analyst specifies values for the independent variables that form a regression model. The application then generates a predicted value for the dependent variable through a statistical simulation that takes account of the model's key parameters (including the standard errors for the regression coefficients). It then repeats that process. . . . typically 1[,]000 times, or enough to approximate the entire probability distribution for the dependent variable. . . . ").

[166] *See* Gary King et al., *Making the Most of Statistical Analyses: Improving Interpretation and Presentation*, 44 AM. J. POL. SCI. 347, 347 (2000) (explaining that Monte Carlo statistical simulations used in *Clarify* "extract . . . currently overlooked information" that "(1) convey[s] numerically precise estimates of the quantities of greatest substantive interest, (2) include[s] reasonable measures of uncertainty about those estimates, and (3) require[s] little specialized knowledge to understand").

[167] Of course, these figures are different (slightly, in some cases) from the raw percentages that we displayed above in Figure 1 because the underlying conduct findings are not normally distributed.
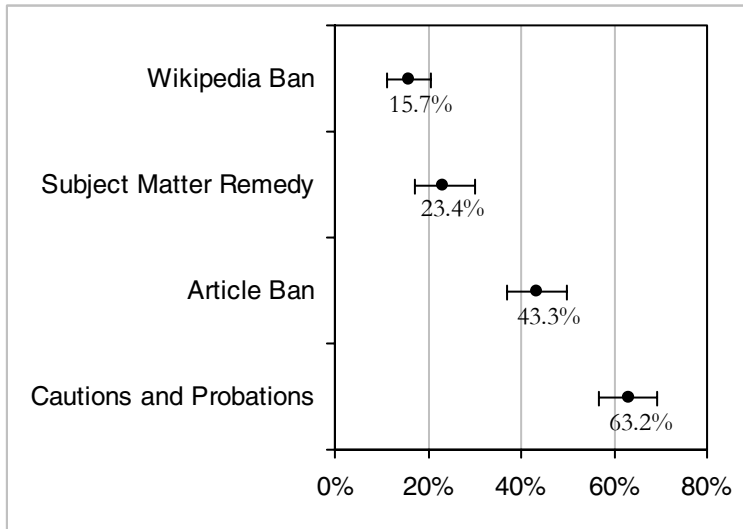
Figure 2: Predicted probability of remedies (on the *x*-axis) when all conduct findings are set at their means. The whiskers around each numbered coefficient 95% confidence intervals. In particular: Wikiban .154 (.11/.21); Subject .229 (.17/.30); Article .432 (.37/.50); Caution .634 (.57/.69).

Not surprisingly, figure 2 illustrates the relative unwillingness of the Arbitration Committee to ban parties from the site, even for brief periods of time. That reluctance is confirmed by the relative place of subject matter remedies and article remedies. Finally, it appears that the Arbitration Committee issues cautions, probations, and paroles liberally. We interpret this finding as evincing the Committee's willingness to delegate authority broadly, as these kinds of remedies allow site administrators to exercise much more power than they ordinarily possess.

We now focus on the individual remedies in turn, repeating the *Clarify* analysis we have undertaken. We will analyze the remedies in order of the likelihood of their imposition.

b. The Cautionary Remedy

Recall that in the "typical" case, we predict the likelihood of a cautionary finding is 63.3%. But now imagine a case where there is no anti-social conduct, no anti-consensus activity, and no improper editing. In such cases,

we find that the likelihood of the Arbitration Committee issuing a cautionary remedy is a mere 30%. What happens when all three types of conduct are present? The likelihood rises to 88%.

We can apportion the relative contribution of each of the underlying conduct findings. When only bad editing is present, the likelihood of a cautionary remedy is 56%. Thus, we predict that in more than half the cases with an editing conduct finding, a cautionary remedy will result. Similarly, when only anti-consensus conduct is present, the likelihood of a cautionary remedy is 57%. When only anti-social activity is present, the likelihood of a cautionary remedy is 44%. Figure 3 illustrates these relationships.

Figure 3: Predicted probabilities of the Cautionary Remedy (the *x*-axis), controlling for significant conduct findings (the *y*-axis), holding all non-significant variables at their means, and the significant variables as present if noted and absent if not. Whiskers denote 95% confidence intervals.

Figure 3 demonstrates that the cautionary remedy is motivated most strongly by individuals who have failed to work with others—they are repeatedly warned to pay attention to others' work and to refrain from reverting edits indiscriminately. Similarly, editing violations (such as violations of the NPOV policy) provide grist for warnings. This suggests that the Arbitration Committee attempts to enforce these particular rules largely through moral suasion and delegation to lower-level administrators.

c. Subject-Specific Remedies

We now repeat this analysis, looking at the remedy of banning users from editing a particular article. Recall that in the average case, this remedy is applied 43% of the time. In particular, we seek to understand which conduct findings are associated with subject-specific remedies. Figure 4 displays the results of an analysis that, controlling for all other factors, illustrates the correlation between article bans and findings of contempt, impersonation, and anti-social behavior.
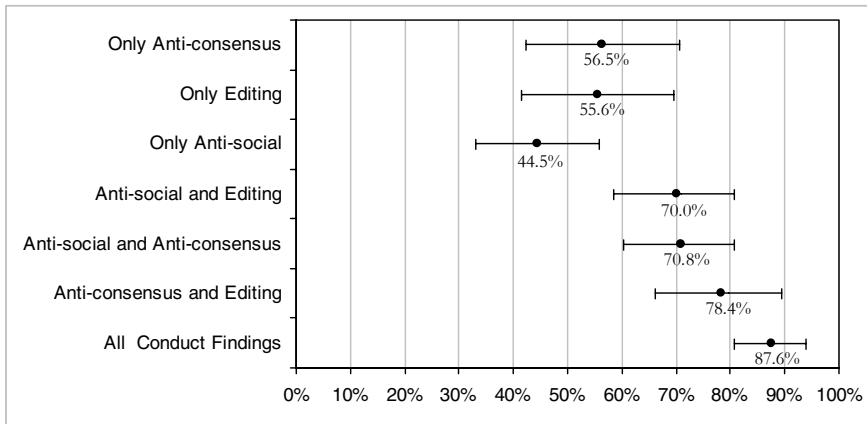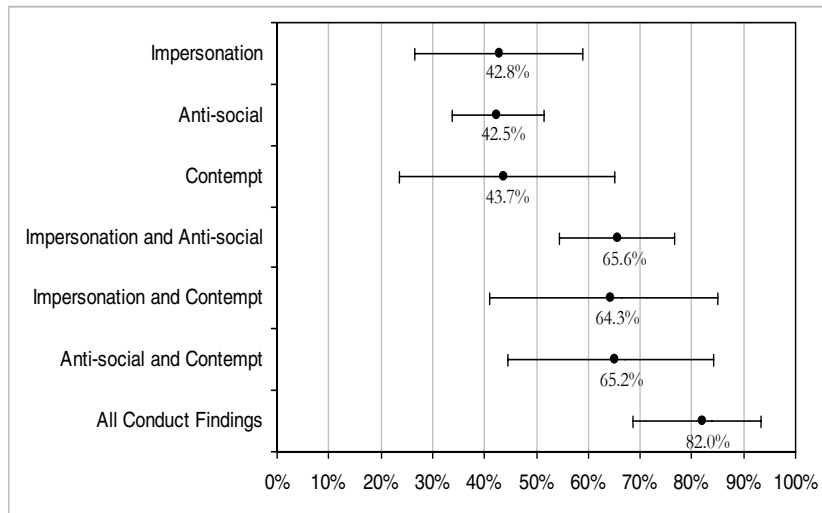
Figure 4: Predicted probabilities of the Article Ban remedy (the *x*-axis), controlling for significant conduct findings (the *y*-axis), holding all non-significant variables at their means, and holding editing conduct finding at its mean. Whiskers denote 95% confidence intervals.

Obviously, the presence or absence of these contempt, impersonation, and anti-social behavior findings makes a huge difference. Where all three findings are present, the likelihood of an article ban rises from the average (43%) to 82%. Each individual conduct finding has a similar, although less dramatic, effect on the likelihood of an article ban. Notably, the absence of consensus and the existence of article chaos are not statistically related to article-wide bans. This suggests that article bans are largely *not* about bad editing of particular articles, but rather about individuals who, by their behavior, seem to be unable to accept Wikipedia's social structure. Such individuals do not play well with others.

d. The Subject-Matter Remedy

Next, we examine the subject-matter remedy. Recall that this particular remedy involves attempts by the Arbitration Committee to bar editing of entire subject matters (for example, all articles about the Kennedy family).[168] The remedy appears relatively rarely. In the typical case, there is only a 23% chance that a subject-matter remedy will be imposed.
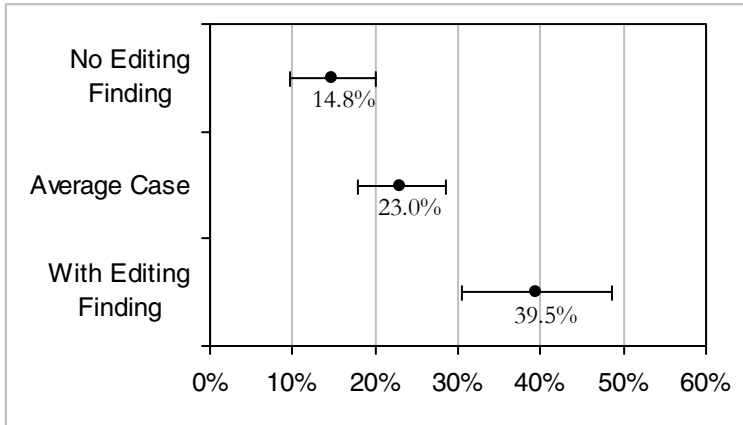
Figure 5: Predicted probabilities of the Subject Matter Ban remedy (*x*-axis), controlling for the presence of the significant Editing Conduct Finding (*y*-axis), holding all non-significant variables at their means. Whiskers denote 95% confidence intervals.

Figure 5 shows that findings of inappropriate editing techniques bear heavily on the Arbitration Committee's willingness to impose subject-matter wide remedies. Further investigation reveals that the constituent aspects of the editing conduct finding which affect the subject matter remedy are: tendentious editing, editorial removal of citations, and (most importantly) violation of the NPOV policy.

e. Total Wikipedia Bans

Finally, we turn to the most extreme remedy available to the Arbitration Committee, a total ban from the Wikipedia community. This banning remedy

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[168] *See* Wikipedia: Requests for Arbitration/Regarding Ted Kennedy, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/Regarding_Ted_Kennedy#Remedies (last visited Feb. 15, 2009) (banning three users from "editing articles and talk-pages related to the Kennedys for one year").

has been the subject of some controversy among Wikipedians, who argue that it is imposed too frequently and indiscriminately. Our analysis casts some doubt on that critique.

Our statistical analysis shows that the editing conduct finding is *negatively related* to being banned from the community. This is the only significantly negative relationship in our sample. In the typical case, we predict that the Arbitration Committee would impose a ban around 15% of the time. Yet where the editing conduct—and only the editing conduct—is present, we predict that the Arbitration Committee will ban only 6% of the time. In contrast, when either impersonation or anti-social conduct is present, the likelihood of the ban remedy increases significantly to around 21%. When both impersonation and anti-social conduct are present, the likelihood of a ban increases still further, to 38%. Figure 6 illustrates these results.
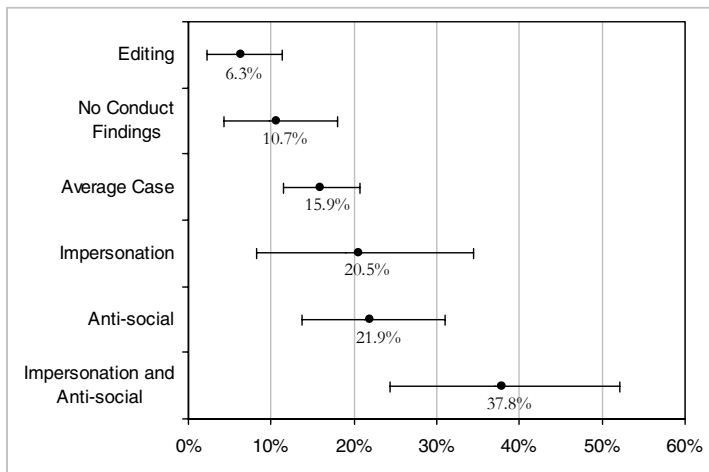
Figure 6: Predicted probabilities of being banned from the community (*x*-axis), holding all non-significant variables at their means, and varying the presence of significant conduct findings (*y*-axis). Whiskers denote 95% confidence intervals.

Notably, banning is more likely in cases that involve only impersonation and anti-social behavior than in cases that include those types of misconduct *plus* editing violations. This relationship accords with the insight that *even bad editing suggests a commitment to the community*. While the Arbitration Committee issues punishments for editing violations, a user's desire to edit

seems to influence the Committee's thinking—editors are cautioned or put on probation, not banned.

These findings strongly suggest that bans from the Wikipedia community are applied to extremely anti-social individuals who either harass others or seek to use the Wiki-project for personal gain (i.e., sockpuppets). By contrast, individuals who merely fail to follow the rules regarding editing are much more often cautioned or steered clear of particular articles. Banning is reserved for users who operate under a set of norms entirely distinct from that of other members of the community, or who make life so unpleasant for their fellow users that they risk destroying the social glue that makes the project possible.

4. Comments and Cautions

These data suggest several conclusions, which viewed together, unsettle the conventional wisdom of how Wikipedia operates.

First, we confirmed that the Arbitration Committee does not itself resolve factual disputes between parties. As Arbitration Committee member Mark Pellegrini wrote, "[o]ur policy has been to sanction bad behavior, and let the community take care of the articles."[169] Arbitration focuses on behavioral outliers—banning, for example, a user who makes threats to disrupt another's offline life, but placing under mentorship a user who disruptively, but probably in good faith, creates large numbers of very short new articles.[170] Similarly, the Arbitration Committee spends significant amounts of time (almost half of all cases) dealing with violations of editing norms. Comparatively little time is spent governing administrators or reinforcing the authority of the Committee itself.[171]

Second, we find that the Arbitration Committee targets its remedial authority based on the type of user conduct finding. Most significantly, it reserves bans for those cases where users are truly anti-social, either in their

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[169] E-mail from Mark Pellegrini, *supra* note 124.

[170] *Compare* Wikipedia: Requests for Arbitration/Brahma Kumaris, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/Brahma_Kumaris (last visited Feb. 7, 2009) (ordering ban), *with* Wikipedia: Requests for Arbitration/Maoririder, http://en.wikipedia.org/wiki/Wikipedia:Requests_for_arbitration/Maoririder (last visited Feb. 7, 2009) (ordering mentorship).

[171] As Arbitrator Steve Dunlop put it: "[Wikipedia] is not a debate club. I look at behaviors and try [to] deal with any that are clearly out of bounds. I look at net contributions—whether or not a user is contributing enough to overcome the trouble they cause. I look at principles we're trying to reinforce and precedents we want to establish more clearly." E-mail from Steve Dunlop, *supra* note 136.

behavior toward others, or in their unwillingness to follow the rule that forbids editing under covert alias accounts. This suggests that the Committee seeks to prune the community only of those individuals who have distinctly anti-social motivations, rather than those who simply have trouble following particularized editing rules. Thus, the Committee tries to filter out disruptive trolls and at the same time filter back in those trolls who could potentially contribute positively to the community. As a result, dispute resolution actually plays a constitutive role for the community.

Third, we observe that the Arbitration Committee is merciful, imposing lenient remedies more frequently than far-reaching penalties. This suggests that the arbitral system embodies elements of a criminal justice system, with notions of lenity, rehabilitation, and recidivism. As a result, many offenders are allowed to remain part of the community, albeit with certain restrictions. What remains is an interesting question that is addressed in the next Part: Why has Wikipedia chosen this labor-intensive route of conforming participants' behaviors, instead of taking the easier path of simply banning all transgressors?

III. CONSTITUTIVE CONFLICT: A THEORY OF DISPUTE RESOLUTION AS A MEANS OF ORGANIZING SOCIAL PRODUCTION

In this Part, we synthesize the previous qualitative and quantitative depictions of Wikipedia's dispute resolution system. As we have explored, the system seems designed to permit continued conflict—of a certain type, between certain kinds of users—while retaining a limited role for true "punishment." These characteristics mark the system as distinctive, at least when compared to the offline legal system. We explore here the role that this distinctive regulatory system might have in creating cohesiveness in an online community. That is, when does conflict play a constitutive function?

A. Conflict, Resolution, and Community

The Wikipedia dispute resolution system represents an attempt at bringing order to a community through its own internally created system, according to its own internal rules. Law, as the outside world knows it, does not exist as a binding code in whose shadow the Wikipedia dispute resolution system operates. Rather, law represents a dystopian "other" system that the Wikipedians hope to avoid.[172]

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[172] *See supra* Part II.A (describing the "no rules" culture of Wikipedia).

In his landmark work, *Order Without Law*, Robert Ellickson conducted an empirical anthropological study to understand how ranchers in Shasta County, California, dealt with damage caused by cattle gone amok.[173] Concluding that law is less central than previously thought, Ellickson employs game theory to understand how social order can be created without law as communities rely on social norms or less formal rules.[174]

Some writers doubt the degree to which Ellickson's seminal insights can be extended beyond the framework of close-knit, homogeneous, long-term actors like the Shasta ranchers. In particular, they note that it may be difficult to replicate similar private orderings on the Internet, among communities that are diffuse, heterogeneous, fluid, and often anonymous.[175] To the extent that Ellickson's ranchers are long-term, identifiable players in a defined geographic community, they seem almost the polar opposites of Internet users.

But sociological work suggests that this pessimism about online ordering might be premature. In particular, sociologists point to the importance of *reputational capital* in coordinating online behavior. Sellers on eBay, for example, are channeled to virtue by their reputational scores.[176] Indeed, some

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[173] ELLICKSON, supra note 22, at 281–83 (1991); *see also* Peter H. Huang & Ho-Mou Wu, *More Order Without More Law: A Theory of Social Norms and Organizational Cultures*, 10 J.L. ECON. & ORG. 390, 390–91 (1994) (describing Ellickson's work as consisting of "empirical anthropological field studies"). Ellickson's work has spawned a wealth of literature, including at least three symposia. Symposium, *Law, Economics, and Norms*, 144 U. PA. L. REV. 1643 (1996); Symposium, *Social Norms, Social Meaning, and the Economic Analysis of Law*, 27 J. LEGAL STUD. 537 (1998); Symposium, *The Legal Construction of Norms*, 86 VA. L. REV. 1577 (2000). For a review of the literature in this area, see Robert C. Ellickson, *The Evolution of Social Norms: A Perspective from the Legal Academy*, *in* SOCIAL NORMS 35 (Michael Hechter & Karl-Dieter Opp eds., 2001).

[174] Ellickson cites, among other works: ROBERT AXELROD, THE EVOLUTION OF COOPERATION (1984); RUSSELL HARDIN, COLLECTIVE ACTION (1982); JOHN MAYNARD SMITH, EVOLUTION AND THE THEORY OF GAMES (1982); and EDNA ULLMANN-MARGALIT, THE EMERGENCE OF NORMS (1977). ELLICKSON, ORDER WITHOUT LAW, *supra* note 22, at 156 n.1. *See also* Mark Cooney, *Why Is Economic Analysis So Appealing to Law Professors?*, 45 STAN. L. REV. 2211, 2215–17 (1993) (reviewing *Order Without Law* and describing Ellickson's use of game theory to understand the ranchers).

[175] *See, e.g.*, Margaret Jane Radin & R. Polk Wagner, *The Myth of Private Ordering: Rediscovering Legal Realism in Cyberspace*, 73 CHI.-KENT L. REV. 1295, 1309–10 (1998) (citing Ellickson and observing that while the "[a]chievement of stability in self-regulated commons is often thought to be dependent on the degree to which the cooperators are a close-knit, homogenous cultural group" and that while the "old" Internet "was such a group," the "new" Internet is not); Lior Jacob Strahilevitz, *Social Norms from Close-Knit Groups to Loose-Knit Groups*, 70 U. CHI. L. REV. 359, 360 (2003) (concluding that "cooperation may be no less rare in loose-knit groups than in close-knit groups," such as those Ellickson described, but "the mechanisms by which cooperative norms arise and are enforced are different").

[176] *See, e.g.*, Beth S. Noveck & David R. Johnson, *Society's Software*, 74 FORDHAM L. REV. 469, 475 (2005) (predicting the "rise of social reputation systems" to support online interaction); Strahilevitz, *supra* note

sociologists point to the unique measures that Wikipedia has taken to generate governance by those who form certain parts of the community, even though those individuals are not particularly close-knit.[177] Others point to certain features of the Wikipedia community, including the power that its emphasis on consensus gives to minority viewpoints,[178] the importance of discussions and debates in shaping article pages,[179] and the capacity of the community to influence individuals' participation over time.[180]

We believe that Wikipedia's dispute resolution system is not merely a feature that fosters cooperation. Rather, we believe that the conflict inherent in Wikipedia's DNA—based on its users' belief that truth will emerge from online dialectic—is made constitutive by the dispute resolution process, crowned by the Arbitration Committee.

B. Wikipedia: Which Trolls to Keep?

The key findings from the data are: (1) despite the primacy of editing norms in discussions about Wikipedia by scholars and by the public, findings of editing misconduct are actually *negatively* correlated with total bans from Wikipedia; and (2) total bans from Wikipedia are largely limited to instances of impersonation and anti-social behavior.

In general, the relative prevalence of warnings may demonstrate the Arbitration Committee's commitment to a *rehabilitative function* for punishment. As figures 1 and 2 show, warnings are the most common remedy, and as figure 3 shows, warnings tend to be issued for editing misconduct and conduct that is anti-consensus, rather than anti-social. That is, to the extent that parties show a desire to participate by editing and maintain relatively low

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175 at 360 ("[C]ooperation may be no less rare in loose-knit groups than in close-knit groups, but . . . the mechanisms by which cooperative norms arise and are enforced are different.).

    [177] *See* PHOEBE AYERS ET AL., HOW WIKIPEDIA WORKS: AND HOW YOU CAN BE A PART OF IT 323–27 (2008) (describing how the election system for Wikipedia administrators is limited to users with a certain level of editing history).

    [178] Henry Farrell & Melissa Schwartzberg, *Norms, Minorities, and Collective Choice Online*, 22 ETHICS AND INT'L AFF. 357, 358 (2008).

    [179] *See* Fernanda B. Viégas et al., *Talk Before You Type: Coordination in Wikipedia*, 40 HAW. INT'L CONF. ON SYS. SCI. 1 (2007). The abstract for this article is *available at* http://dx.doi.org/10.1109/HICSS. 2007.511.

    [180] *See* Susan L. Bryant et al., *Becoming Wikipedian: Transformation of Participation in a Collaborative Online Encylcopedia*, GROUP'05, PROC. OF THE 2005 INT'L ACM SIGGROUP CONF. ON SUPPORTING GROUP WORK 1 (2005), *available at* http://doi.acm.org/10.1145/1099203.1099205.

levels of friction with the community, violators are simply warned and allowed to stay in the community, subject to modifying their behavior.

Why not simply exclude bad editors? One theory may be that Wikipedia only works because certain motivated individuals are encouraged to continue fighting with one another through a dispute resolution system that channels them back into the fray. Consider, again, the question introduced in the beginning of this Article: Why has the site created a dispute resolution process that does not actually resolve disputes? As we and others have noted, the Arbitration Committee explicitly refuses to resolve the content of the disputes it hears, and the lower levels of the system are remarkably focused on process rather than substance.[181] As Zittrain notes of the community as a whole, "most . . . subscribe to the notion that there is a divide between substance and process, and that there can be an appeal to content-independent rules on which meta-agreement can be reached, even as editors continue to dispute a fact or portrayal in a given article."[182]

Not everyone is happy with this approach. On one hand, some believe it does not go far enough. They think that, to stay as content-neutral as possible, arbitrators should not consider a user's edits at all, even if those edits amount to nothing more than "blatant nonsense."[183] On the other hand, some believe that detachment from content has gone too far. Avoiding content issues can be maddening:

> What happens when dispute resolution doesn't work? You try all the steps about content [prior to arbitration], and nothing is different at the end than at the beginning. Arbitration is only for conduct issues. Wikipedia seems to only *enforce* policies about conduct; policies about content are not enforced.[184]

This frustration, however, overlooks the important advantage of focusing on process. It also overlooks the benefit that comes from being unwilling to exclude users who neglect the process despite their motivation to continue to

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[181] *See, e.g.*, JOHN BROUGHTON, WIKIPEDIA: THE MISSING MANUAL 194 (2008) (explaining that the Arbitration Committee focuses on behavior, not content disputes).

[182] *See* ZITTRAIN, *supra* note 10, at 144.

[183] *See* Posting of Brya to Talk: Arbitration Committee, http://meta.wikimedia.org/wiki/Talk:Arbitration_Committee (Aug. 27, 2008, 05:22 UTC) (stating that, in Dutch arbitration committee elections, the view of users that content was off limits was so strong that "only those were elected who were opposed to the ArbCom even looking at the edits of a user in making a ruling on that user").

[184] Posting of Life.temp to Wikipedia Talk: Dispute Resolution, http://en.wikipedia.org/wiki/Wikipedia_talk:Dispute_resolution (May 6, 2008, 09:35 UTC).

engage with others and to stand behind their edits. Channeling such users back into the site avoids challenges to the arbitrators' legitimacy because of excessive exclusion of editors from what is supposed to be an "open encyclopedia." It also maintains the encyclopedia's vitality by encouraging participation, even if imperfect.

We think of these disruptive, troublesome users as being "weeded in" to the fray. The "weeding in" concept helps to explain the negative correlation between editing violations and being banned from Wikipedia. The site relies on the willingness of individuals to contribute and edit pages voluntarily. The arbitrators seem to want, inasmuch as it is possible, to retain those users who take the initiative to edit. The best result for the community is that violators are warned or subjected to lesser punishments and continue to contribute. By contrast, were the arbitrators to actually resolve disputes, they would strip editors of the motivation to continue improving articles. And were the arbitrators to take it a step further, and actually ban bad editing, they would quickly eat away at the productive core of the project.

That said, the Arbitration Committee also seeks to "weed out" those users whose energies it believes cannot be productively channeled. The harshest penalty—a total Wikipedia ban—tends to be applied against those who commit anti-social behavior. Not only are such parties banned, but the more than 1,500 administrators are empowered to be on the lookout for their return under different usernames. The administrators do this by focusing on IP addresses, tell-tale conduct, and even choice of words.[185]

C. Game Theory and LSSP

The data analysis findings can be helpfully illustrated through a game-theoretic discussion of the dynamics of "weeding out" and "weeding in," which we formalize in the following two subsections. For those who find game theory unduly unrealistic or sterile, we offer the following summary.

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[185] The result is a kind of "broken windows" model of enforcement. James Wilson and George Kelling suggest that to reduce vandalism, small amounts of vandalism to a building must be repaired to discourage greater and more serious problems. James Q. Wilson & George L. Kelling, *Broken Windows*, THE ATLANTIC, Mar. 1982, at 29. The metaphor works also for Wikipedia—quickly banning those who commit anti-social acts makes it less likely that such anti-social behavior will spread and be encouraged. In a sense, these bans work much like online versions of the United Kingdom's "anti-social behaviour orders" (ASBOs), civil orders issued to prohibit individuals from future misconduct to protect society at large. *See* Crime and Disorder Act, 1998, c. 37 (Eng.) (introducing ASBOs), *available at* http://www.opsi.gov.uk/acts/acts1998/ukpga_19980037_en_1. Like such orders, Wikipedia bans focus the community on its own protection, and empowers those charged with policing—the administrators—to take action.

The Arbitration Committee performs two different functions simultaneously. First, it seeks to remove those who would destroy Wikipedia through their failure to abide by its norms and rules. Second, it seeks to provide guidance to those who value Wikipedia as a community, but who disagree as to proper conduct, so that they can coordinate their behavior within a common framework of norms and rules.[186]

1. Explaining Weeding Out

The dynamic of weeding in and weeding out is grounds for reconsidering the conception of Wikipedia and LSSP as a "commons" in the Garrett Hardin sense, which has been at the heart of theory in this area.[187] Recall that Hardin's tragedy of the commons is "a particular multi-person version of the same motivational structure" behind the Prisoner's Dilemma.[188] In this

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[186] Some may further object that game theory offers an unnecessarily sterile view of human motivation and does not fully explain how cooperation arises through dispute resolution. For those readers, our analysis simply moves the question of behavioral motivation back a step, from "what explains cooperation" to "what explains the dispute resolution system." An answer to that new question might be reciprocity. *See generally* Lior Jacob Strahilevitz, *Charismatic Code, Social Norms, and the Emergence of Cooperation on the File-Swapping Networks*, 89 VA. L. REV. 505 (2003) (discussing reciprocity theory in file swapping); Eric A. Smith & Rebecca Bliege Bird, *Costly Signaling and Cooperative Behavior*, *in* MORAL SENTIMENTS AND MATERIAL INTERESTS: THE FOUNDATIONS OF COOPERATION IN ECONOMIC LIFE 115, 126–29 (Herbert Gintis, et al., eds. 2005) [hereinafter MORAL SENTIMENTS] (explaining that observing altruism and reciprocating might explain collective good production). Reciprocity theory would challenge the rational actor assumptions we make in the text. *See* Dan M. Kahan, *The Logic of Reciprocity: Trust, Collective Action, and Law*, *in* MORAL SENTIMENTS, *supra* at 339, 342 (attacking game theory's view of collective action in part because it assumes that all individuals have a dominant individual strategy, and arguing that when individuals conclude that "those around them are inclined to contribute, they'll respond by contributing in kind"). The degree to which reciprocity theory explains the success, or failure, of Wikipedia's dispute resolution system in fostering norms of cooperation is obviously difficult to test. On the one hand, it may decrease the amount of extant cooperation by reminding altruists that non-cooperators (trolls) are abundant. However, such trolls are often excluded from the community, suggesting that those who remain are reciprocating altruists' efforts. Researchers investigating this issue would be profitably directed to the RfC talk pages, where they can view Wikipedians propagating norms and discussing their understanding of the Arbitration Committee's "rules".

[187] *See* BOYLE, *supra* note 26, at 47 (discussing Hardin's concept that collectively managed resources have inherent problems).

[188] THOMAS C. SCHELLING, MICROMOTIVES AND MACROBEHAVIOR 110–11 (1978) (explaining Hardin's theory as it relates to game theory). In the game theory literature, Garrett Hardin's famous allegory of the tragedy of the commons has been modeled as a variant of the "Prisoner's Dilemma," labeled the "Herder Problem" or the "Commons Dilemma". *See* ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 11 (1990) (describing "the herders" as "fac[ing] a prisoner's dilemma"); BRUCE WYDICK, GAMES IN ECONOMIC DEVELOPMENT 57 (2008) (noting that "[b]ecause the grazing pasture is a common-pool resource, each is tempted to allow his goats to graze longer than he should . . . reflecting a Prisoners' Dilemma" among two parties); James E Alcock & Diana Mansell, *Predisposition and Behaviour in a Collective Dilemma*, 21 J. CONFLICT RESOL. 443, 444 (1977) (comparing Hardin's version to the "Prisoner's Dilemma"); Stanley R. Carpenter, *Sustainability and Common-Pool*

subpart, we explore the degree to which this view of LSSP, as posing merely those sets of problems inherent in the Prisoner's Dilemma, is inaccurate. We argue that the challenge of LSSP may be best seen as a mix of the Prisoner's Dilemma and coordination games.[189]

Hardin's herder problem and the related Prisoner's Dilemma involve a straightforward problem of cooperation.[190] In both situations, there is a single best result from a social perspective, but solo defection can make one party better off at the expense of others, and universal defection leads to the worst possible outcome. This dynamic can be illustrated with game theory—a field whose chief focus of endeavor is explaining "'the way through from individual behavior to collective behavior.'"[191] Specifically, we can focus on a couple of games that provide an idealization of collective action and the incentives for individuals.[192] The following figure illustrates the well-known Prisoner's Dilemma:

Resources: Alternatives to Tragedy, J. SOC. FOR PHIL. & TECH., 36, 44 (1998) ("Hardin's description of herders on a common has been conceptualized as a well known dilemma in mathematical game theory known as the 'Prisoner's Dilemma.'"); Diana Richards, *Reciprocity and Shared Knowledge Structures in the Prisoner's Dilemma Game*, 45 J. CONFLICT RESOL. 621, 621 (2001) (suggesting that Hardin's model is based on the "prisoner's dilemma").

[189] This section owes a great deal to the work of Thomas Schelling and also to Richard McAdams' helpful discussion of how that work can relate better to law. *See* THOMAS C. SCHELLING, THE STRATEGY OF CONFLICT 56 (2d ed. 1980) (providing examples of such games); Richard H. McAdams, *Beyond the Prisoners' Dilemma: Coordination, Game Theory, and Law*, 82 S. CAL. L. REV. 209, 212–13 (2009) (arguing that there is value in looking at games other than the "Prisoners' Dilemma," including coordination games).

[190] Thomas Schelling defines the Prisoner's Dilemma" as "a configuration of payoffs that gives both players dominant incentives—in the absence of an enforceable agreement to the contrary—to choose strategies that together yield both players a less desirable outcome than if both had made opposite choices." SCHELLING, *supra* note 189, at 214.

[191] HERVÉ MOULIN, GAME THEORY FOR THE SOCIAL SCIENCES 5 (2d ed. 1986) (citation omitted).

[192] *See id.* at 1 (defining "game" as it applies in game theory).

C (chooses column)

	Cooperate	Defect
Cooperate	**1** *1*	**2** *-1*
Defect	**-1** *2*	**0** *0*

R (chooses row)

While this game is familiar, it is worth considering in detail. Take the perspective of player C. Her payoffs, based on her choice and the choice made by R, are shown by the bolded numbers in the top right of each quadrant. C's dominant strategy is to Defect because she benefits whether player R chooses to Cooperate (since 2 > 1 in the northeast corner of the relevant boxes in the Cooperate row), or whether R chooses to Defect (since 0 > -1 in the northeast corner of the relevant boxes in the Defect row). Player R, whose payoffs are shown by the italicized numbers in the bottom left of each quadrant, has the same dominant strategy, since he does better whether Player C chooses to Cooperate (since 2 > 1 in the southwest corner of the relevant boxes in the Cooperate row), or whether C chooses to Defect (since 0 > -1 in the southwest corner of the relevant boxes in the Defect row).

As in the herder problem discussed in Part III.C.1, the Prisoner's Dilemma leads to a socially inferior result. All the herders would like to be the only ones to overgraze their sheep on the commons, but regardless of whether the other herders cooperate or overgraze (thus defecting from cooperation), an individual herder will face an incentive to choose to overgraze. The result is that they all overgraze, which leads to a depleted commons.

Before we can usefully model LSSP as a Prisoner's Dilemma, we must first account for the fact that there are multiple herders. Thus, LSSP theorists turn to more complex multi-person Prisoner's Dilemma (MPD).[193] Building on the

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[193] *See* SCHELLING, *supra* note 188, at 217–19 (explaining the possibility of extending beyond the two-player game).

Prisoner's Dilemma, an MPD can be defined starting with three simple principles:

> 1. There are n people, each with the same binary choice and the same payoffs.
>
> 2. Each has a preferred choice no matter what the others do [as in the two-player Prisoner's Dilemma]; and the same choice is preferred by everybody.
>
> 3. Whichever choice a person makes, he or she is better off, the more . . . others . . . choose their unpreferred alternative.[194]

Under these conditions, when will a subset of the players in the MPD—if that subset could commit itself—benefit from cooperation even if others continue to defect? That is, when can LSSP survive despite occasional bad users? The formal statement of this fourth condition requires a bit more effort:

> 4. "There is some number, k, greater than 1, such that if individuals numbering k or more choose their unpreferred alternative and the rest do not, those who do [choose the unpreferred alternative] are better off than if they had all chosen their preferred alternatives, but if they number less than k this is not true."[195]

Given these four conditions, we now have a parameter (k) that represents the minimum size group that will benefit from social production given the presence of a substantial number of free-riders. An MPD with these four conditions illustrates the dynamics of an imperfectly solved herder problem—the situation in which Wikipedia finds itself. What the MPD game suggests is that a disciplined core group might overcome the free-rider problem.

In the Wikipedia context, this means that a well-functioning core may be able to produce something worthwhile despite the presence of a significant number of users who do not follow community norms. We refer to those non-conforming individuals as free-riders. That said, the disciplined group may still resent this kind of free-riding. However, as Schelling describes, the

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[194] *See id.* (setting forth these three basic conditions).
[195] *Id.*

absolute size of the group (k) is not all that matters.[196] Instead, where the MPD is open to new entrants, the proportion of cooperators to the total number of participants (k/n) may be crucial.

This background helps us to understand the "weeding out" function in three different (and novel) ways.

First, the most direct way is by ousting some free-riding participants, which reduces the number of free-riders (n - k) as well as the total number of participants (lowering n). We expect that "weeding out" occurs at multiple levels of the dispute resolution pyramid, as some especially disruptive users will be discouraged by others from continuing to participate. At the top level, an ouster is a rare remedy in arbitration.

Second, because the public nature of these arbitration cases, like law, creates its own reality, there is a slightly less direct way in which those who would cooperate are encouraged to participate in the community, and those who would free-ride are discouraged. Particularly where membership of the community is fluid, as it is with Wikipedia, this second function affects the proportion of those cooperating (k/n).

Third, the Arbitration Committee's process of "weeding out" involves, as Part II explains, an identification of particular types of conduct, such as impersonation and anti-social behavior, that get a user banned from Wikipedia. These users not only are free-riders on the existing Wikipedia community, but they may have a dominant strategy of continuing their offensive behavior— regardless of the objections of others, and regardless whether Wikipedia is effectively destroyed. Consequently, the Arbitration Committee must "weed out" those anti-social dominant users (trolls) who would destroy Wikipedia as a common resource. Lior Strahilevtz has suggested that, left unchecked, LSSP will succumb to the "march of the trolls."[197] The MPD theory helps to explain the corrosive effect of this unchecked "march." The problem, of course, is that online trolls do not simply lurk under bridges. The Arbitration

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[196] *See id.* at 221 (explaining that the proportion, rather than the absolute number, can matter in a game or community with open entry/exit over time and giving as examples safety communications equipment on ocean-going vessels and vaccination because in both scenarios the proportion of cooperating actors may matter more than the absolute number.).

[197] Strahilevitz, *supra* note 19, at 1494 (observing that "Internet chat rooms or blog comments began with useful discussions, and then saw their initial audience driven out by spammers, flamers, trolls, and know-nothings" and describing this phenomenon as "a common tale" that "has afflicted a large portion of the Internet").

Committee's task is to identify them and weed them out, both to reduce their overall numbers and to blunt their tendency to drive out non-trolls, so that Wikipedia, as an MPD, does not "tip" in favor of the trolls.

2. *Explaining "Weeding In"*

While the Prisoner's Dilemma aspect of LSSP cooperation is important, that game does not fully capture the dynamic at work. Wikipedia's dispute resolution system not only deals with those who free-ride and refuse to cooperate, but also those who wish to coordinate their behaviors.

To understand the dynamic behind Wikipedia's "weeding in" of some participants despite their misconduct it helps to think about examples of game theory's coordination games. In the easiest case, individuals who wish to coordinate their behavior may face little incentive not to do so. They just require some mechanism to help them reach a jointly optimal outcome. This is the logic at work in the famous "Grand Central Station" game, in which two individuals know they want to meet in New York City on a certain date, but have not set a time and place. It is most important to them to choose the same place and time—but the meeting could occur at any place and time, as long as the other party chooses the same. The tendency is for American experimental subjects to choose noon at Grand Central Station—as shared cultural knowledge creates a natural focal point to which individuals gravitate.[198]

A prominent view among cyberscholars is that technology solves the coordination problem, generally without further mediating forces (like norms or laws). For example, Clay Shirky provides several examples of what he believes to be representative antecedents of this type of techno-charged coordination, including "flash mobs" forming via cell phone to oppose Ukrainian despots and the laity's mobilization via e-mail against pedophilia among Catholic clergy. Shirky argues that relatively simple technological tools remove barriers to collective action.[199] While these are examples of technologically-enabled mass coordination, they are not examples where the incentives of the individuals involved are distinct from their incentives as a

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[198] *See* McAdams, *supra* note 189, at 232 (noting that players solve difficult coordination problems by gravitating towards prominent or conspicuous outcomes, like arranging to meet at Grand Central Station at noon).

[199] *See* SHIRKY, *supra* note 12, at 152–56, 162–67 (giving these examples and describing how new technology "remov[es] two old obstacles—locality of information, and barriers to group reaction").

collective. Rather, the incentives for individuals may be modeled in the following game:[200]

	C (chooses column)	
	Cooperate	Defect
Cooperate R (chooses row)	**2** **2**	0 0
Defect	0 0	*1* *1*

Individuals want to cooperate with like-minded parties to defy a despot or to confront pedophile priests—but they do not want to be the only ones to act, which could lead to individual suffering.[201] Nonetheless, they prefer all acting to all not acting (the bolded northwest quadrant maximizes payoffs of 2 to each player compared to the italicized southeast quadrant's 1 to each player). In short, the optimal result for each individual is also the joint optimal result. In game-theoretic terms, in these examples, technology is solving a coordination game,[202] not a Prisoner's Dilemma.

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[200] Note that the dynamic that Shirky—and this game—describes is slightly different than that in the Grand Central Station game. In the latter, presumably the two individuals would be just as happy to meet at Grand Central as the observation deck of the Empire State Building, so the payoffs to each party in the northwest and southeast quadrant would be identical.

[201] Some might quibble and argue whether, in fact, the individual who opposes a despot, but stays home while others are crushed in public protests, is truly worse off than if no one had protested (that is, should defecting while others cooperate yield 0, while defecting while others defect yield a superior outcome of 1?). One could argue that there is a cost to seeing like-minded individuals suffer that makes this worse than if nobody had protested at all.

[202] The classic example of a coordination game was presented by Thomas Schelling:

> You are to meet somebody in New York City. You have not been instructed where to meet; you have no prior understanding with the person on where to meet; and you cannot communicate with each other. . . . [Y]ou will just have to try to make your guesses coincide. . . . You were told the date but not the hour of the meeting.

SCHELLING, *supra* note 189, at 56. In this example, each party *individually* wants to meet, and they also *jointly* benefit by meeting. Schelling asked a group of students this question, and found the most common answer was noon at (the information booth at) Grand Central Station. *Id.* at 55 n.1. While there is nothing that makes Grand Central Station a more optimal location than other places, such as a bar or a library, its salience makes it

However, the coordination game dynamic in Wikipedia dispute resolution is actually somewhat more complicated than the easiest case. In the easiest case, few have an incentive to depart from the equilibrium.[203] But in real LSSP, some participants who are "weeded in" by arbitration would actually prefer to get their way than to abide by the site's behavioral standards. We observed many arbitration "defendants" whose behavior suggested that, while they might prefer to get their way, they valued a Wikipedia governed by NPOV over a degenerated or nonexistent Wikipedia. That is, while they would prefer a Wikipedia in which they were able to push their own point-of-view or behave egregiously without others doing the same, their behavior tended to confirm endorsement of the Wikipedia community.

The dynamic involved in this kind of "weeding in" can be modeled by the game of "Chicken,"[204] a hopefully apocryphal game played by teenagers, in which two parties drive their cars directly at each other. If one swerves first, he loses. If both fail to swerve and thus collide the results are catastrophic.[205]

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a natural focal point. *See* Adam M. Samaha, *Undue Process*, 59 STAN. L. REV. 601, 623 (2006) (describing this result to Schelling's experiment).

[203] In game theory, the concept of a Nash equilibrium can be understood as a situation in which each player would respond negatively to the question: "Knowing the strategies of the other players, and treating the strategies of the other players as set in stone, can I benefit by changing my strategy?"—that is, they could not improve their situation by changing their choice, given the choice of the other player(s). SCHELLING, *supra* note 189, at 97.

[204] *See, e.g.*, BERTRAND RUSSELL, COMMON SENSE AND NUCLEAR WARFARE 30 (1959) (comparing nuclear brinksmanship to "Chicken!," "a [motor] sport which, I am told, is practised by some youthful degenerates"); REBEL WITHOUT A CAUSE (Warner Bros. 1955).

[205] *See* McAdams, *supra* note 189, at 224. ("Chicken . . . [is] a fictional game between teenagers who drive their cars directly at each other, where the one who swerves first loses face, but the failure of either to swerve is catastrophic.").

C (chooses column)

	Swerve	Straight
Swerve R (chooses row)	1 1	2 0
Straight	0 2	-1 -1

Note that in this example there are actually two different outcomes that R might prefer, depending on what C chooses.[206] R's better choice is to go straight if C swerves, and to swerve if C goes straight. But note that while both swerving yields a joint payoff (1 + 1 = 2) equivalent to either of those equilibria (2 + 0 and 0 + 2, respectively)—and both are superior to the joint payoff of both going straight (-1 + -1 = -2), the distributional consequences of the two equilibria are significant.

The Chicken dynamic resembles the problem of "weeding in" those trolls who would ideally like to push their own views on Wikipedia, but as a second-best choice, prefer an NPOV-governed Wikipedia community to no Wikipedia at all. The problem is determining how to keep these trolls from sliding back into free-riding, since this is their preference. This is akin to the problem in the Chicken game of getting an individual to swerve even though he would be better off going straight if he could count on the other party to swerve (since 2 > 1).

Wikipedia arbitration can "weed in" these participants and simultaneously provide guidance to focus them on coordination rather than free-riding. As a result, the arbitration system actually provides a constitutive function in resolving conflict by enunciating principles that help users coordinate their behavior. Users who value community more than getting their own way may welcome the setting of such standards. Typically, coordination problems like this can be solved by the forces of history, culture, and law, among other

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206   *See supra* note 203 (defining a Nash equilibrium).

means.[207] For a community whose history, culture, and law are the vague and diffuse creations of online interaction, the Wikipedia arbitration system steps in to play this role. Through its rulings, the arbitration system provides cautions and mentors to those trolls it decides are worth keeping. By doing so, it makes positive use of them by channeling their community participation into better community involvement.

The weeding out and "weeding in" of the Wikipedia arbitration system shows that the depiction of LSSP grounded in the models of both the tragedy of the commons and the Prisoner's Dilemma should be reconsidered. The marching trolls who vex Wikipedia possess a variety of motives and may be in different degrees of misalignment with the values of the Wikipedia community.

The virtue of the Arbitration Committee is that it breaks these problems down case by case. In doing so, it effectively sorts the "defendants" into different categories. For some, the Committee finds past behavior indicates that there can be no realistic expectation of future cooperation with the community. For other defendants, the Committee provides guidance aimed at coordinating individual behavior with that of the community.

D. Is This Cooperation Generalizable?: A Prescription

The key question for LSSP is whether Wikipedia's ability to generate a functioning dispute resolution system is replicable. Benkler's view is that technology changes everything by lowering transaction costs and giving greater scope to nonpecuniary human urges.[208] However, that may not be enough to yield effective methods of nonmarket, nongovernment self-regulation in every case. Ultimately, a significant factor is the "fit" between the community and the possible dispute resolution tools.

While technological optimism alone will not solve the coordination problems of LSSP, technology does reduce the barriers to managing a large and diverse community. To the extent that there are volunteers, such as the Wikipedia arbitrators, whose ideologies drive them to volunteer to manage a

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[207] See McAdams, supra note 189, at 230–32 (explaining that "coordination games model situations of inequality, make history and culture relevant, and explain one way that law works expressively, independent of sanctions").

[208] See BENKLER, supra note 19, at 92.

site's conflicts, the lower transaction and communication costs of the Internet make it easier for them to work together.

Our findings suggest that technology is not the only driving force behind the success of LSSP online. We find that a commitment to regulation *and* punishment is also quite important. A physical world (indeed, a geophysical world) example may help make this point more concrete. In the United States, there is only one major ski mountain owned as a cooperative by skiers, as opposed to being owned by for-profit investors, which is the norm.[209] In terms reminiscent of Benkler's discussions of blood donations and amateur athletics, Mad River Glen's description of its cooperative ethos states that it is "a place where skiing is a sport not an industry, working with nature not against it."[210] But from this warm winter-sports embrace, one class of people—once outré and *verboten* but in this modern age accepted on virtually all American ski mountains—finds itself strictly excluded.[211] The pariah class? Snowboarders. Accounts vary, but one reason cited in particular is the disproportionate wear-and-tear they would inflict on a common resource. Snowboarders tend to scrape the snow off trails, and with its commitment to "natural" skiing rather than industrial snowmaking and grooming, the Mad River co-op's most precious common resource—a snow-covered "natural" mountain—would be threatened.[212]

The beauty of Wikipedia's dispute resolution, and a natural feature of LSSP online, is that its decisions need not be binary—excluding one category and including another. Rather, given sufficient volunteer energy, and low enough transaction costs, a more granular approach to governing a commons can emerge. That is, to protect a cooperative ethos, it is now possible to actually make public, case-by-case pronouncements—perhaps even building one's own version of common law from the principles used to decide. The cooperative ethos itself may be a delicate equilibrium that requires exclusion or coordination, depending on the case, of those who would threaten that balance.

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[209] *See* Mad River Glen: About the Co-op, http://www.madriverglen.com/coop/?Page=1about.htm (last visited Dec. 4, 2008).

[210] *Id.*

[211] Only two other ski areas in North America, both in Utah, exclude snowboarders. *See* Press Release, Mad River Glen, Snowboards? Shareholders Just Say No! (June 1, 2007), *available at* http://www.madriverglen.com/press/Media_Kit/?Page=snowboard.html.

[212] *Id.* (reporting that snowboarders will continue to be banned "[d]espite the fact that snowboarders account for 25–30% of all lift tickets sold in the United States" and that some shareholders "believe that snowboarders would ruin the legendary moguls, while still others feel that they would scrape the natural snow off Mad River Glen's sinewy trails").

Like a cooperative Vermont ski mountain, Wikipedia is a shared nonprofit endeavor with its own peculiar ethos. Encouraging community loyalty requires a system that gives voice to community views on behavior and forces those whose presence would hurt the norms and ethos that govern the community to exit the system.

Cooperation and coordination in LSSP may require the ability to efficiently identify those participants who are amenable to the community and its goals. In Wikipedia dispute resolution, the broader principles to which arbitrators appeal—such as NPOV and avoiding personal attacks—are less bright-line rules than methods to gauge the commitment or buy-in of individual participants. In the absence of status, reputation, or cash, the ability to adjudicate this kind of buy-in, based on conduct, helps foster cooperation and coordination in LSSP. Thus these broader principles, as touchstones for governance, may well be prerequisites for success.

All that said, it is at best unclear whether Wikipedians themselves believe that the formal dispute resolution system, as it is currently structured, is ideal. Some argue that the Arbitration Committee has declined in importance and popularity over since 2008, as more of the routine work of dispute resolution is done by software "bots" that correct small errors and repair routine malfeasance on a large scale.[213] "ClueBot," for example, crawls the site nightly, reverting instances of vandalism based on an algorithm that detects useless editing.[214] Other automated programs check for copyright violations[215] and assess article quality.[216] As a former arbitrator explained, this phenomenon has both enabled the enormous growth of the site and shifted power from the Arbitration Committee to "[t]hose who can define what constitutes 'routine malfeasance'" in a piece of software code.[217] The result may be that the Arbitration Committee will "fade in importance and ultimately turn into something else or specialize in particular kinds of problems. I think that history will show that it was an important transitional element establishing

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[213] *See* Wikpedia: Bots, http://en.wikipedia.org/wiki/Wikipedia:Bots (last visited Mar. 5, 2009) (defining bots and explaining their function).

[214] *See* User: ClueBot, http://en.wikipedia.org/wiki/User:ClueBot (last visited Mar. 5, 2009) (discussing the ClueBot).

[215] *See* User: CorenSearchBot, http://en.wikipedia.org/wiki/User:CorenSearchBot (last visited Mar. 5, 2009) (discussing how the bot patrols new pages and matches the contents against a web search).

[216] *See* User: WP 1.0 Bot, http://en.wikipedia.org/wiki/User:WP_1.0_bot (last visited Mar. 5, 2009) (explaining the purpose of WP 1.0 bot).

[217] E-mail from Steve Dunlop, supra note 150.

precedent and in devolving the authority once held by Wales to the broader community."[218]

CONCLUSION

The prescription for coordinating behavior in LSSP looks similar to something the Wikipedians were trying to avoid: a legal system. Those who make rulings must appear to be honest brokers. The rules or principles they use must be decipherable. And the system should be open to participants who want to use it. Nevertheless, a system for coordinating LSSP will still require human effort and will still need to present itself as a better alternative to other ways of resolving a conflict.[219]

Other examples of LSSP could draw on Wikipedia's lessons for conforming behavior. Ultimately, they will need to draw in participants for dispute resolution, which some may consider a thankless task. Yet this is not enough. They must also develop principles that not only identify and exclude harmful trolls, but also nurture and redirect the useful energy of potentially beneficial trolls.

That said, a cheerier message for LSSP can also emerge from Wikipedia dispute resolution. Benkler's *Wealth of Networks* consciously styles LSSP as a contemporary response to Adam Smith's cold dichotomy in the *Wealth of Nations* between market exchange and state coercion.[220] A contemporary of Smith's once noted that, in their world, nothing was certain save "death and taxes."[221] In our user-generated world, we might add labors of love, and a kind of law.

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[218] *Id.*

[219] *Cf.* Curtis J. Milhaupt & Mark D. West, *The Dark Side of Private Ordering: An Institutional and Empirical Analysis of Organized Crime*, 67 U. CHI. L. REV. 41, 60 (2000) (explaining how inefficient systems and a lack of lawyers lead the Japanese to choose organized crime to handle disputes).

[220] *See* Milton Friedman, *Introduction* to LEONARD E. READ, I, PENCIL: MY FAMILY TREE AS TOLD TO LEONARD E. READ (1999) (describing "Adam Smith's invisible hand" as "the possibility of cooperation without coercion" together with Friedrich Hayek's emphasis on the ability of the price system to make "'individuals do the desirable things without anyone having to tell them what to do'"), *available at* http://www.econlib.org/library/Essays/rdPncl0.html.

[221] Letter from Benjamin Franklin to Jean Baptiste Le Roy (Nov. 13, 1789), *reprinted in* X THE WRITINGS OF BENJAMIN FRANKLIN 68, 69 (Albert Henry Smyth ed., The McMillan Company 1907).

APPENDIX

Logistic Regression: Predicting Remedies

Covariate	Wikipedia Ban	Subject Ban	Article Ban	Caution and Probation
	Coefficient (Robust Standard Error)	Coefficient (Robust Standard Error)	Coefficient (Robust Standard Error)	Coefficient (Robust Standard Error)
Impersonation	0.796**	-0.218	0.983**	0.094
	(0.348)	(0.346)	(0.299)	(0.315)
Editing	-0.655*	1.350**	0.501*	1.124**
	(0.359)	(0.303)	(0.272)	(0.291)
Anti-Consensus	0.134	0.448	-0.139	1.166**
	(0.339)	(0.300)	(0.270)	(0.282)
Anti-Social	0.961**	0.290	0.976**	0.654**
	(0.426)	(0.328)	(0.295)	(0.291)
Article Chaos	0.783	-0.057	-0.360	-0.752
	(0.546)	(0.538)	(0.500)	(0.512)
Contempt	-0.067	-0.46	1.06**	0.067
	(0.543)	(0.544)	(0.464)	(0.470)
Constant	-2.402	-2.075	-1.409	-0.864
	(0.425)	(0.354)	(0.300)	(0.282)
Pseudo R2	0.07	0.09	0.11	0.12

$* p < 0.10; ** p < 0.05$