

Cyberspace and the Struggle to Maintain and Manage It

Written by P.J. Blount

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P.J. BLOUNT, DEC 3 2019

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In 1515, a live rhinoceros arrived in Portugal. It was a gift from Sultan Muzaffar II of Gujarat to King Manuel I of Portugal. The King then gifted the creature on to Pope Leo X, but the rhino died in transport. The pope instead received the taxidermied corpse, and German artist Albrecht Dürer based a drawing, titled *Rhinoceron*, on a sketch and secondhand description of that corpse. This drawing was then turned into a woodcut that made it reproducible on the printing press. Dürer's rhinoceros, though fairly inaccurate, was reproduced and became the dominant depiction of the rhinoceros for well over a hundred years. The medium introduced by Gutenberg, facilitated the spread of an idea that became tenaciously melded into the public understanding of what constituted the thing that was signified by "rhinoceros."^[1]

The "boilerplate rhino" is a function of "Gutenberg's revolution," and it illustrates the ability of ideas to entrench themselves through reproduction.^[2] The power of the image is itself a function of its reach, and Dürer's decision to make the image a woodcut shows his intent for mass market publication.^[3] Similarly, Chapter 5 discussed the power of cartography in constructing imaginary cartographies. These images of the international system are the graphic conceptualization of the "Westphalian state." This term itself is one that has been entrenched through repetition and reification and is still used to describe the international system despite the dramatic differences between the contemporary nation state and the nation state that emerged from the Peace of Westphalia.^[4] The resulting 'boilerplate state' is one that reifies its border through the projection of legal jurisdiction and political identity across a spatial geography denoted by solid black lines on a map. The Westphalian imaginary was repeatedly recast onto the developing international system as a descriptor and a depicor.

This final chapter will examine how Cyberspace reprograms international governance. The first section of this chapter will use the metaphor of lawmaking as programming as an analytic lens to show how Cyberspace changes the processes of the international system. The second section will then delve into some of the theoretical implications of a reprogrammed world. Specifically, this section will examine the connection between a global cybergeography and the project of Cosmopolitanism and global governance. The final section will identify challenges and questions that a reprogrammed world presents for future research.

Rule by Algorithm

Director Terry Gilliam's film *Brazil* depicts a dystopian future governed by complexly bureaucratic government. In the film, a farcical error in a printer causes the death of an innocent civilian by putting in motion a bureaucratic process that must run to completion. The bureaucracy is such that a terrorist, played by Robert De Niro, is a renegade heating and air conditioning repairman who now fixes HVAC systems without filing the proper paperwork, much to the chagrin of the process-oriented government. The film's aesthetic is marked by the use of bizarre machines that personify the complex bureaucratic machinations of the governance system. Indeed, De Niro's character, Archibald Tuttle's crime of terror is that of short-circuiting the governance system and bypassing established processes. In the world Gilliam creates, code is not law so much as law is code.

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What Gilliam portrays is a government that has become so process burdened, that its own existence and internal legitimacy are functions of its processing power – its ability to administer the state, which is distinct from governing the state. The metaphor Gilliam exploits is that of governance as a machine. The reason this metaphor has such resonance is that the modern bureaucratic state emerged alongside the industrial age. Bureaucracy is a form of government that is meant to work like a machine to some extent. Lawmakers make laws that are implemented and carried out by government officials. In this model, lawmakers define the inputs and the outputs and the administrative branch of government devises procedures (i.e. regulation) for accomplishing these tasks. While administrators make decisions, the processes they must follow confine their actions in such a way as to ensure the legislated outcomes.

If it is accepted that code is law, then programmers become lawmakers. Whether they are working to spec on a contract or working for their own personal purposes, programmers create rules by writing algorithms. Computer programs are made of algorithms, which are “*effective procedure[s] or* a way of getting something done in a finite number of discrete steps.”^[5] This is similar to the role of procedural legitimacy in governance systems, which seeks to set procedures that reproduce just outcomes consistently. Rawls, for instance, noted this metaphorical link between computing and governance, describing the “political process as a machine which makes social decisions when the views of representatives and their constituents are fed into it.”^[6] This observation points to the central metaphor employed by this section, which is understanding law as code. This metaphor will be used as an analytic tool to illustrate pragmatically how Cyberspace reprograms the world. At the outset, it should be noted that this is a limited metaphor, but it is being used at a very high level of application in order to illustrate why the model presented herein matters to scholars of international governance.

Computer code is esoteric to the average individual despite its ubiquity. It is the magic in the machine that is often depicted in movies as a dizzying stream of green 1s and 0s whizzing past coders typing at lightning speed. While computer code can be quite complex, how it functions should not be esoteric. Code can be understood as a syntax for instructions to produce different results. Code is a manifestation of formal logic in that it often occurs as if/then and x=y type statements. Code is, quite simply, a set of instructions or procedures.

Code tells the computer (i.e. the machine itself) what to do through a set of logical arguments that come in a specific order. As an example, a microcontroller is a small computer that can be programmed to manipulate physical objects. Beginners are often taught how to write code that uses the microcontroller to turn an LED light on and off with the press of a button. This code functions in a series of steps (see Fig. 9.1). It will first assign the button to an input and the LED to an output. Next, it will tell the computer to check the state of the input and store it. Then it instructs the machine that if the button is pushed, then the light should be turned on. Otherwise, the light should be off. These procedures run over and over, constantly monitoring for the state of the button and adjusting the state of the LED as necessary. Until the program is stopped these are the rules that govern the functions of the machine by instructing how to turn its inputs into outputs.

One of the unexplored areas of Lessig’s “code is law” principle is the use of it as a means to reflect back on law as code. In a modern bureaucratic state, law can be explained in terms of code.^[7] In this model a State’s constitution is an operating system, its legislation becomes its programs, and regulations become the procedures that are performed over and over to produce results, such as justice, until the program is changed by users. The international system is akin to a network that connects the various operating systems and mediates the interactions between these autonomous computers.

The first thing to note here is how this connects with legitimacy as discussed in Chapter 4. The legislature in this model sets outputs which include things such as practical outcomes (e.g. lowering of crime), efficiency outcomes (e.g. in procurement process), and political outcomes in terms of rights (e.g. justice). The procedure serves the purpose of maintaining consistency in these outcomes and as a verification mechanism that allows users to ensure that the system is properly programmed to produce the desired outcome. Procedures are used to compute or process outputs consistent with the requirements of substantive legitimacy within that operating system and are meant to be a limitation of choice by excluding the whims of individual government agents from the governance process.^[8] This is similar to a computer program, which is a set of processes that the computer goes through in

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order to create an output, the major difference being that the computer, without reprogramming, is unable to violate the rules it has been given, whereas the administrative official can violate those rules.

This difference aside, at a high level we can see that the metaphor of law as code reveals something interesting about the nature of governance. Programming is a skill that requires a coder to conceptualize and set outputs of a program through a set of instructions written in a standardized language. Importantly, different programmers accomplish tasks in different ways, and they must make decisions that balance between practical outputs, efficiency, and substantive outputs for the user of the program. The nature of the computer transforms the governance as machine metaphor into a governance as computation metaphor. The “abstract norms that obtain regularity and predictability” for programmers are written in algorithms.^[9] The algorithm itself emerged well before the computer and was posited as a way in which abstract mathematical formulas could be used to describe quite literally the entire cosmos.^[10] The algorithm found in the digital computer is a device that could make the algorithm’s output manifest. It becomes the process through which programmers can manipulate and recreate the world. It allows for the creation of imagined spaces – and Cyberspace might best be understood as a multiverse of ideas.^[11]

Law and regulation are similarly ideas that are given effect through the bureaucratic administrative machine. A simple government program for the disbursement of a government benefit functions analogously. Legislation defines the inputs and outputs and regulation then puts into place a series of procedures that government officials use to process public administration. A citizen seeking to claim a benefit would give inputs required by the program. These inputs would then be checked against a set of variables or criteria. If the individual meets those criteria the official disburses the benefit, else the government official does not disburse the benefit.

In this metaphor, the international governance system becomes a networking protocol that allows the state operating systems to communicate by instituting transaction points for the different systems to communicate, such as the ITU. The protocol though is one that facilitates interconnection and not interoperability. As a result, it requires those it connects to have certain features in order to take part in the network. This allows us to probe why Cyberspace can be said to reprogram the world. As noted in Chapter 1, international governance has historically been successful at deploying international law that governs world scale technology, but it has been unable to encompass Cyberspace technologies effectively within its regime. It is submitted here that this is a direct result of the materiality of international governance. The territorial rootedness of the international system indicates a need for transnational physicality in order for it to effectively interconnect parties for solutions. As noted in Chapter 7, the ITU’s ability to successfully govern international telecommunications is a function of its ability to create law that governs the physical circumstances of the technology, but not the ideational content carried on that technology. This is a constant theme in international law. A good example can be found in the Genocide Convention and the UDHR, which were both passed in December 1948. The Genocide Convention did not include a provision on racist and discriminatory speech, because the United States opposed its inclusion on grounds that it violated the right of free speech.^[12] The Universal Declaration of Human Rights, on the other hand, included the right to free speech, but was not adopted as a binding treaty and the Soviet States abstained from voting.

In international governance, the state is the only device that can connect to the network and take part as a full member of the political geography. International governance is only equipped with tools that ensure “territorial integrity” against physical incursions. Ideational incursions have always been outside the realm of the international network, and states have been left free to control these incursions in a best efforts system. The international network then is not interoperable because the operating systems are able to resist certain inputs. The physical layer components of the Internet are clearly technologies that the international system is equipped to regulate fueling realist interpretations of Cyberspace. The logical layer, though, subverts the physicality of that border crossing by freeing content from its analog barriers. The protocols that function at the core of the Internet pushes code-making (i.e. regulatory) abilities to the user by making human interaction interoperable across borders. It breaks the strictures of the operating system allowing for geographic convergence and multiplying interaction points.

An example might better illustrate this. The operating system on a device limits the types of instructions that the device can run, which limits the programs it can run. In the early days of computing the operating system was a significant limitation on what programs one could run, and the operating system in use can still be very limiting.

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Applications like Google Docs subvert the strictures of the operating system by allowing the user to run a program through their web browser, erasing the borders set by the operating system. This is analogous to what is happening in the international system. The logical layer of the Internet is at once content and medium; the medium is literally inseparable from the message.^[13] This allows interoperability not conceived of within international geography and gives entrance to hackers like Assange who are able to hack into the international network. Cyberspace is a geography that enables individuals, corporations, and states to short-circuit the international protocols and create interoperability across borders and among actors.

What this reveals is that law is code is just as important as code is law. For instance, the mass surveillance discussed in Chapter 8 allows the state to extend its law and power over individuals outside its borders in contravention of the assumed materiality found in international governance. The state is clearly circumventing the coordinating process of the international system through Cyberspace. This hack cannot be patched by international governance, because it has never been vested with the ability to regulate ideas. The technology opens the possibility of global interoperability.

A Digital Cosmopolis

Much of the juxtaposition in this research has been to pit Cyberspace in contrast to 'realist' readings that tend to imagine the state as pursuing its interests against other states using power, which is embodied by military might and economic wealth – that is: blood and treasure.^[14] While a reprogrammed world does not completely diminish realism's explanatory power, it does remove the state from its dominance over a number of activities including war. For instance, while Stuxnet could be read in realist terms, such an analysis will likely gloss over some of the central problems that Cyberspace causes for realism. The primary problem is in realism's conception of power. Power in terms of military might is no longer something monopolized by the state. The state still has access to and the ability to wield power in Cyberspace, but it is no longer the sole holder of that power. Power itself has been reprogrammed so as to allow others to wield power on par with the state. Similarly, power in terms of treasure has changed as well. Technologies like Bitcoin have changed the nature of currency, removing the state's ability to control the flow of funds. Digitized power is transferable outside of the zero-sum world of the realist.

This critique of realism might lead one to try and place the reprogrammed world within the context of cosmopolitan theory. Cosmopolitanism exists in various forms, but its theorists all converge on the idea of a world governance system that extends political and social rights to individuals as opposed to states.^[15] These theorists argue that the development of a world-scale governance order is the only way to overcome the various global injustices by extending "[p]rinciples of distributive justice ... [to] a global scope."^[16] Cosmopolitanism is different in scope from the "loose community of states" represented by the UN. It is a project that seeks ways to form a "community of world citizens, who can legitimate their political decisions . . . on the basis of democratic opinion."^[17] Cosmopolitan theorists extend reciprocal rights and obligations from the sphere of the state, making a universalist claim giving individuals "moral personality."^[18]

At face value, cosmopolitanism seems like a theoretical outlook that could accommodate the alternative geographies of the reprogrammed world, since the Internet "has unleashed the extraordinary possibility for many to participate in the process of building and cultivating culture that reaches far beyond local boundaries."^[19] Even Schmitt notes the power of a "global consciousness ... oriented to a common hope" in the shaping of world space.^[20] Cosmopolitanism embraces such respatializations as it itself pushes a global rather than international perspective abandoning the "state [as] the natural container of and vehicle for politics."^[21] Cosmopolitanism even shares rhetorical and discursive ties to cyber-utopians like John Perry Barlow.^[22]

Despite the decentralized nature of Cyberspace, its technology holds a hope for cosmopolitanism. Cyberspace displays the ability to reconceptualize global space and connect individuals without the interference of the state. Multistakeholder governance reflects core notions of cosmopolitanism in its deliberative approach that places governance in a "global context ... defined by multiple and overlapping networks."^[23] Cyberspace represents "global space," and from the perspective of the cosmopolitan, it manifests the possibility of new global imaginations, and social movements using Cyberspace often employ "cosmopolitan repertoires."^[24] Pragmatically, the technology

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could help to fill gaps in data that would be critical to any such enterprise,^[25] and it holds the most promise as a technology for facilitating world-scale deliberation.

Despite the hope found in the technology, the reprogrammed world does not necessarily mesh with cosmopolitanism. Central to this is the authority structure discussed in Chapter 7. The Internet as part of its code bucks centralization. A core function of packet switching is to eliminate “global control.”^[26] So while cosmopolitanism seeks the “establishment of some sort of authoritative regime” to spread equality, Cyberspace only serves to unite the globe through an interoperable protocol which fragments the world into networks.^[27] Cyberspace does not seek equality in its users, only interoperability. So, while Cyberspace opens global geographies, it cannot be said to have yet opened a cosmopolitan geography that could accommodate deliberative democracy of a global scale.

What this tells us is that while Cyberspace presents an unprecedented opportunity for the deployment of cosmopolitan or utopian visions, technological determinism is a mistake. Technological solutions for building world-scale community were critiqued as early as the 1930s through “skepticism about the capacity of a global community of connectivity to transmute into a global community of responsibility.”^[28] The technology itself may be a necessary precursor to a cosmopolitan system, but is not sufficient by itself.^[29] Despite all the tools that Cyberspace presents, “society may lack the informational tools necessary to involve everyone in democratic decision-making and to foster widespread economic and social flourishing.”^[30] As a result despite the increase in intercultural interchange “global democracy is nowhere in sight,”^[31] and “programmed utopias” should likely be met with skepticism.^[32] Technology is powerful, but cosmopolitanism is still at its core a problem of developing global knowledge.^[33]

It is easy to view Cyberspace as a tool with which to reprogram the world into a digital cosmopolis, but the capability of the technology to restructure global affairs along cosmopolitan values will be closely related to how Cyberspace itself is governed. As Lessig reminds, the Cyberspace that currently exists is not the only Cyberspace possible.^[34] Whether or not cosmopolitan geographies are possible will depend in large part of the innovative capacity that is pushed to the edges of the networks.

Defragmenting the International

This research posits that the international system developed to coordinate world scale governance in the wake of WWII is being transformed by cyber-technologies that are driving a reconceptualization of global order. The first section in this chapter used the metaphor of programming to show how Cyberspace allows borders to be hacked and recoded. The second section used cosmopolitanism as a lens to show that though Cyberspace helps to conceptualize other global geographies, it has its own logics that these structures must also contend with as they seek to build global knowledge. These two discussions both point to uncertainty in the future that Cyberspace might enable. This is because the “mental consequences of the Internet ... are still very hard to assess.”^[35] One thing is certain though: Cyberspace will continue to shape the space in which global affairs unfold. This calls for tracking future encounters between Cyberspace and international geography to build a proper understanding of how geography is being reprogrammed. Outside of defining the nature and scope of systemic changes, there are a number of theoretical questions that are ripe to be evaluated in light of restructured world-scale geography.

The primary question that should be raised is how we can conceptualize legitimation within dual geographies. International legitimacy and Cyberspace legitimacy are based on different principles, but they both tap into similar ideas of democracy and human rights.^[36] For instance, the Western liberal democratic state is premised on representative democracy in which voters are defined by territory. Cyberspace as a spatial geography is everywhere, so Internet governance communities depend on democratic voting, but are open to participation by all interested individuals. Legitimacy is closely tied to consent, which is skewed as a result of Cyberspace. The state’s ability to legislate change in the Internet within its territory maintains the risk of changing the Internet in another state’s territory contrary to the consent of its citizens. At the same time, a small group of elites that form IGCs can make decisions based on consent that can change how the Internet works without going through processes established within a state to ensure in part the administration of justice.^[37] This raises deep questions about the nature of legitimacy within the space of multiple dynamic regulatory systems.

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A second, related question is what the nature of democracy is within Cyberspace. Cyber-utopians have long called for community governance arguing that such governance is more democratic, but the suggestion that “democracy in cyberspace means democracy in the real world . . . is false.”^[38] Democracy is not a static condition, and the democracy observed in IGCs is open and inclusive in thought, but participation is de facto limited by the high level of technical knowledge needed to meaningfully participate. This means that not only are most people unable to engage in these processes, the processes themselves are in potential danger of being co-opted by groups that flood the membership of IGCs. Corporations and states can send individual representatives to take part in the deliberations and are seemingly not limited to a single representative since membership is open. In other words, how do users reconcile their “multiple identities” and “plural affiliations,” and take part in multiple governance systems.^[39]

Additionally, community governance can be seen to have undemocratic tendencies, and can come in “its form of lynch-mob” sanctions.^[40] Libertarian coders have even sought to use it as a marketplace for assassinations.^[41] Thus, a second layer of questions on democracy in Cyberspace result from the fora of public discourse being privately owned social media platforms such as Facebook and Twitter.^[42] While a private fourth estate has been considered central to liberal democracy, the lines become blurred through the phenomenon of the “citizen reporter.” The WikiLeaks controversy is instructive as it shows how states can use diplomatic pressure to place burdens on expression through pressure on dominant corporations. This example shows that “the privatization of information flows offers possibilities for private monopoly and sub-optimal exclusion of social groups.”^[43] These technologies recode the public discursive space, and democracy under such conditions is insufficiently theorized.^[44] This is especially so in light of the widespread election interference by Russia in a number of other states.^[45] This interference took advantage of the way in which social media allows for echo chambers to emerge and shape public discourse.^[46] By flooding these systems with #fakenews, an external state was able to influence the public discourse occurring outside its borders. While these activities certainly affect the “political independence” of other states, there was no need for a prohibited use of force.

Third, and building upon the previous two questions, is what the nature of global multistakeholder governance will be as it unfolds as a new category within world-scale governance structure.^[47] This question is one of determining how such a governance structure, which removes the state from the dominant position, will interact with international government mechanisms. This new category of governance will create rules and norms that can be made effective within the territory of a state without the consent mechanisms found in traditional international organizations. Multistakeholder governance is still an emerging concept and it is still yet to be defined with much clarity.

Finally, a raft of ethical and philosophical questions arises in terms of how to best structure Cyberspace. Its design is currently foundational to the way in which it alters geography, and its architecture is highly contested in a number of fora.^[48] If we accept that “we can and we should make more use of technology for participatory democracy,” then there are critical issues to ensuring that Cyberspace governance maintains that possibility,^[49] so that it can “promote communicative opportunities.”^[50] Cyberspace, like other major technological advances, has already changed the world, but there is a challenge in ensuring that it impact the world in a positive manner. As we see with incidents like Stuxnet and cybercrime, Cyberspace also has the potential to be used in a way that causes harm to humanity as a whole. As a result, it should be expected that Cyberspace governance will become more contested as its uses and reach increase. Amidst policy circles there is a need for understanding the role of Cyberspace in the reprogrammed world, and the technical nature of its social imbrication. Cyberspace is an incomplete, and likely an incompletable, process. Based on the logic of the algorithm, Cyberspace grows at the rate of ideas. As a result, we can think of Cyberspace as a manifestation of the human consciousness. Cyberspace is more than just technical standards, and governance must contend with the age-old problem of constructing political space that allows freedom of ideas, but at the same time keeps the governance structure from collapsing on itself.

The questions raised here are by no means ignored in the vast literature on Cyberspace, but they are most often engaged with at the level of particular technologies. These questions are raised here in relation to Cyberspace as an alternative geography to international geography. The international system is a legal and political settlement that defines territorial space, but Cyberspace is a technology that is pushing against this order by recoding the borders that flow from the international system. As such, these questions need to be addressed as the technology continues to reshape global social life.

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Computer programs are ideas that are both medium and message. International governance has been effective at regulating conduits for information, but has had limited success in extending its regulatory net to include the content of the information in these conduits. Digitization presents a unique challenge to international governance because it inseparably bonds the message and the medium. As a result, states have shown a limited ability to exert a variety of controls over Cyberspace domestically, but they have been unable to address it as a transborder phenomenon that is a “composite of the space of flows and the space of places.”^[51]

The convergence of medium and message creates a challenge for international governance that is premised on material territorial borders. This is not the only reason that the international will be increasingly challenged by Cyberspace. The message-medium convergence is also implicit in emerging social understandings of the space of consciousness. The networking of the world means that individuals “can change [their] geography, and anything that happens there creates a change in someone’s physical geography.”^[52] It is these innovative connections that are currently driving economics, politics, and a range of other social interactions. In much the same way that the dropping of Little Boy on Hiroshima and the first orbit of Sputnik did, Cyberspace is changing the shape of the world. The Cold War fear of distant powers raining fire from the sky has been replaced by a post 9/11 fear of the Internet radicalized neighbor. Similarly, the power and awe of strategic nuclear weapons and space exploration that has held so much sway over international politics is being replaced by the power of Cyberspace and the struggle to maintain and manage it in such a way as to enrich humanity. If the Internet and Cyberspace are to be effective tools of liberty, freedom, and justice then Cyberspace must be understood not just within domestic governance frameworks, but also within the international governance system, which defines the borders that enclose domestic systems. In Schmitt’s words:

The new nomos of our planet is growing irresistibly. [...] But what is coming is not therefore boundless or a nothingness hostile to nomos. Also in timorous rings of old and new forces, right measures and meaningful proportions can originate.^[53]

Notes

[1] Quammen, *The Boilerplate Rhino* (2000) 201–209.

[2] *Id.* at 203.

[3] *Id.* at 206.

[4] See generally Clark, *Legitimacy in International Society* (2005) 51–70.

[5] Berlinski, *The Advent of the Algorithm* (2000) xvi.

[6] Rawls, *A Theory of Justice* (1971) 196.

[7] Berlinski, *The Advent of the Algorithm* (2000) xiii.

[8] Coicaud, *Legitimacy and Politics* (2002) 32.

[9] *Id.* at 20.

[10] Berlinski, *The Advent of the Algorithm* (2002).

[11] For example Tanz, “Playing for Time” (2016). See also Lloyd, *Programming the Universe* (2006).

[12] Schabas, *Genocide in International Law* (2009) 320.

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- [13] See Berlinski, *The Advent of the Algorithm* (2000) 309–310.
- [14] Caney, “Review Article” (2001) 986–87.
- [15] See generally, Caney, “Review Article” (2001); Craig, “The Resurgent Idea of World Government” (2008) 133–42; and Dallmayr, “Cosmopolitanism” (2003) 421–42.
- [16] Caney, “Review Article” (2001) 975.
- [17] Habermas, *The Postnational Constellation* (2001) 105–106. See also Held, *Democracy and Global Order* (1995) 22–23.
- [18] Caney, “Review Article” (2001) 977.
- [19] Lessig, *Free Culture* (2004) 9.
- [20] Schmitt, *Nomos of the Earth* (2003) 50.
- [21] For instance Goodhart, “Human Rights and Global Democracy” (2008) 401.
- [22] See generally Turner, *From Counterculture to Cyberculture* (2006).
- [23] Goodhart, “Human Rights and Global Democracy” (2008) 401–402.
- [24] Fielder, “The Internet and Dissent in Authoritarian States” (2013) 167.
- [25] See generally Coicaud & Tahri, “Nationally Based Data” (2014) 135–45.
- [26] Leiner et al., “A Brief History of the Internet” (2012).
- [27] Craig, “The Resurgent Idea of World Government” (2008) 135.
- [28] Critique by Reinhold Niebhur in Menon, “Pious Words, Puny Deeds” (2009) 236. See also Cooper, “What Is the Concept of Globalization Good For?” (2001) 193.
- [29] Streck, “Pulling the Plug on Electronic Town Meetings” (1998) 19.
- [30] Goodman & Chen, “Modeling Policy for New Public Service Media Networks” (2010) 114.
- [31] Rao, “Equity in A Global Public Goods Framework” (1999) 68.
- [32] Bearman, “The Untold Story of Silk Road” (2015).
- [33] Featherstone & Venn, “Problematizing Global Knowledge and the New Encyclopaedia Project” (2006) 10–11.
- [34] Lessig, *Code 2.0* (2006) 31–37.
- [35] Habermas, *The Postnational Constellation* (2001) 43.
- [36] *Id.* at 119.
- [37] Alvestrand & Lie, “Development of Core Internet Standards” (2009) 129.

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- [38] Streck, "Pulling the Plug on Electronic Town Meetings" (1998) 18–47, 40–41.
- [39] Sen, "Global Justice" (1999) 120–121
- [40] Tambini et al., *Codifying Cyberspace* (2008) 3.
- [41] Greenberg, *This Machine Kills Secrets* (2012) 69–70 and Bearman, "The Untold Story of Silk Road" (2005).
- [42] DeNardis & Hackl, "Internet Governance by Social Media Platforms" (2015).
- [43] Tambini et al., *Codifying Cyberspace* (2008) 10.
- [44] *See generally* Chadwick, "Bringing E-Democracy Back In" (2003) 443–55.
- [45] *See generally* Galante & Ee, *Defining Russian Election Interference* (2018).
- [46] *See generally* Sunstein, *Republic.com 2.0* (2007).
- [47] Leiner et al., "A Brief History of the Internet" (2012).
- [48] *See generally* DeNardis, *The Global War for Internet Governance* (2014).
- [49] Noveck, "Designing Deliberative Democracy in Cyberspace" (2003) 5.
- [50] Goodman, "Media Policy and Free Speech" (2007) 1211.
- [51] Castells, "Communication, Power and Counter-Power in the Network Society" (2007) 249.
- [52] Hayden, "The Future of Things Cyber" (2013) 4.
- [53] Schmitt, *The Nomos of the Earth* (2003) 355.

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