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# Show Me on the Map Where They Hacked You: Cyberwar and the Geospatial Internet Doctrine

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# SHOW ME ON THE MAP WHERE THEY HACKED YOU: CYBERWAR AND THE GEOSPATIAL INTERNET DOCTRINE

*Molly Sauter*<sup>1</sup>

*Using metaphor theory as presented by George Lakoff and Mark Johnson, this paper presents four conceptual metaphors found in international internet policy documents. This paper argues that these four metaphors encourage the development of a fractured infrastructure, national internets, the importation of international conflicts from the physical world into the online space, and the unquestioned replication of offline structures of power in the online space. The paper further argues that these metaphors serve to preempt regulatory and infrastructural systems based around the preservation of individual rights and freedoms in the online space in favor of systems that are oriented to preserving nation-state based stability and security*

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## I. INTRODUCTION

There are many metaphors commonly used to describe the Internet: the “information super highway,” a “series of tubes,” “the cloud,” the “global village,” an “agora,” or even just the “space” of “cyberspace.” These metaphors provide the hook on which society can hang its understanding, since directly confronting the technical reality of the internet would result in overwhelmed confusion for even the most savvy of techies.

Each of the metaphors above contains within it a web of expectations, mental affordances, and assumptions about the nature, function, and purpose of the internet. Society would expect different things from the *information super highway* than it would from the *global village* or *the cloud*. This paper posits that, while it would be impossible to arrive at the high level of understanding of the online space needed to effectively construct international communications policy without the use of conceptual metaphors, these metaphors can also have a deep impact on the development of communications policy and, in turn, on the development of the technological systems these policies seek to regulate.

Using metaphor theory as presented by George Lakoff and Mark Johnson,<sup>2</sup> this paper presents four conceptual metaphors found in four international internet policy documents: *The internet is a transit/carrier system*, *data/code is an object*, *computers are human proxies*, and *the internet has real world geography*. This paper argues that these four metaphors encourage the development of a fractured infrastructure, national internets, the importation of international conflicts from the physical world to the online space, and the unquestioned replication of offline structures of power in the online space. Furthermore, this article argues that these metaphors preempt regulatory and infrastructural systems based around the preservation of individual rights and freedoms, in favor of systems that are oriented to preserving nation-state based stability and security.

## II. WHAT ARE CONCEPTUAL METAPHORS AND HOW ARE THEY USED IN POLICY

Lakoff and Johnson present in *Metaphors We Live By* their view of metaphors as creating and defining the basic concepts and structures by which people conduct their lives. “Our ordinary conceptual system,” they write, “in terms of which we both think and act, is fundamentally metaphorical in nature.”<sup>3</sup> Using examples, such as “an argument is a war,” “time is money,” and “communication is

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2. GEORGE LAKOFF & MARK JOHNSON, *METAPHORS WE LIVE BY* 3 (1980).

3. *See id.* at 3.

sending,” Lakoff and Johnson argue that language, interpersonal communication practices, and how society thinks and acts are deeply tied to prevailing metaphorical structures, which delineate how concepts may be considered.<sup>4</sup>

Metaphors in Lakoff and Johnson’s analysis operate systematically, linking the thing which is being explained (the “target domain”) to a different, theoretically understood object or concept (the “source domain”), by which linkage to the thing being explained is better grasped. For example, in the metaphor “an argument is war”, the target domain of “an argument” is understood through the conceptual metaphor of “war.”<sup>5</sup> This, in turn, leads to a whole family of “metaphorical expressions,” which exist under the umbrella of, and consistent with, the conceptual “war” metaphor: “He attacked my argument,” “[s]he defended her point,” “[h]er position is unassailable.”<sup>6</sup> The conceptual metaphor delineates the operating space for the metaphorical expressions. What are actually in play are the metaphorical expressions. The conceptual metaphor is present at a higher level of abstraction from the everyday, and it is often unquestioned. The conceptual metaphor is incorporated into a conception of the way things are or should be. As a result, this can foreclose other interpretive frames for the concepts and actions at play.<sup>7</sup>

Though conceptual metaphors and metaphoric expressions are constantly present in people’s interactions with the world, each other, and within ourselves, the purposeful use of the metaphor is especially apparent when attempting to parse out difficult, complex, or esoteric concepts. As complex technological issues move outside the strict purview of the technocratic elite, the discourse of computing and networked technology is becoming increasingly bound by conceptual metaphors.<sup>8</sup> In personal computing, these are often metaphors of the home and body: *A hacker broke into my computer; I saved that to my library; My computer has a virus.* The graphical user interface (GUI), through which the vast majority of people interact with computers and networked systems, is constructed as a visual metaphor of an office, with a *desktop*, *files* residing in *folders*, and a *trashcan* that must be periodically emptied. This constant use of conceptual

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4. *See id.*

5. *See id.* at 4.

6. *Id.*

7. Kristen Osenga, *The Internet is Not a Super Highway: Using Metaphors to Communicate Information and Communications Policy*, 3 J. INFO. POL’Y 30, 32-33, 42 (2013).

8. *See generally* ANNETTE N. MARKHAM, METAPHORS REFLECTING AND SHAPING THE REALITY OF THE INTERNET: TOOL, PLACE, WAY OF BEING (2003).

metaphor systems to render technological systems legible to people, as well as to political and legal structures, has extended to the realm of policy.

The use of conceptual metaphors in the construction and implementation of internet policy is extremely attractive, given the black-boxed,<sup>9</sup> complex nature of technological systems up to this point. Many people have no way of speaking about network communications technologies at the high level needed for policy development without the use of metaphors. These metaphors not only help people conceive of an understanding of these technologies, but they also lay a path for how society expects them to develop. By providing a shared intellectual thread with which society may construct its experiences of even the most confusing and obscure aspects of the world, metaphors allow these individual experiences to become more universal, creating shared vocabularies and frames of experiences. Kristen Osega argues that developing this shared intellectual thread creates “discourse communities,” or groups of people who share the same language, assumptions, knowledge bases, and patterns of thinking about certain issues and topics.<sup>10</sup> The existence of these discourse communities, essentially defined by their ability to effectively speak to each other, makes effective discussion and consensus possible, while at the same time these groups are hampered, by their very nature, from ever moving beyond the conceptual metaphors that tie them together. Discourse communities, while necessary for effective communication and consensus, enable and promote homogenized thinking and the domination of particular conceptual metaphors over others.<sup>11</sup>

The metaphors that dominate these discourse communities and public life, however, may not inherently be better than any other conceptual metaphors that could replace them. Lakoff and Johnson offer the “an argument is a dance” conceptual metaphor as a potential alternative to “an argument is a war.” Would arguments be conducted differently in the West, they ask, if such arguments operated under the cooperative metaphor of “dance” rather than the oppositional and antagonistic metaphor of “war”?<sup>12</sup>

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9. A black box in this context describes a scenario where the user of a system understands the nature of the inputs and outputs of the system, but does not understand the inner workings of the system itself, making it appear to be a black box. The original developer of the theory was German mathematician Wilhelm Caier, though he himself did not call this phenomenon a black box. See EMIL CAUL ET AL., LIFE AND WORK OF WILHEM CAUER (1900–1945) 4, available at <http://www.cs.princeton.edu/courses/archive/fall03/cs323/links/cauer.pdf>.

10. See Osega, *supra* note 6, at 39.

11. *Id.*

12. LAKOFF & JOHNSON, *supra* note 1, at 5.

When considering the differences between the “war” and “dance” conceptual metaphors, it becomes clear that these overarching and structural constructs are not neutral. Rather, as noted by Lakoff and Johnson, conceptual metaphors contain significant sub-texts, which are emotionally and ideologically significant.<sup>13</sup> The metaphors also contain descriptive and prescriptive aspects. Particularly when used in the context of a dynamically evolving system, such as the Internet, the conceptual metaphors employed by designers, regulators, developers, policy-makers, entrepreneurs, and bureaucrats can both reflect and actively shape the “cognitive framework” they employ and impact the actual development of systems.<sup>14</sup> Moreover, conceptual metaphors can be used intentionally to persuade or direct development down a certain path. As Sally Wyatt notes, metaphors “reveal what different actors think [the internet] is but also...they tell us something about what they want it to become...”<sup>15</sup> Metaphors have a normative dimension in that they can be used to help the imaginary become real or true.

In many ways, effective conceptual metaphors become self-sustaining. When society employs metaphors to understand the world, it may also shape that world to reflect the metaphor. Although society may originally employ metaphors to ease its understanding of a concept, the metaphors may “run away with us.”<sup>16</sup> This running away occurs as society constructs further mental models in accordance with its conceptual metaphors, and as society constructs actual world systems and objects. If the common conceptual metaphor for the internet is that of a commons, the systems created may be open, cooperative, and interoperable. However, if the common conceptual metaphor for the internet is restrictive, and more analogous to geographic nation-state boundaries, then perhaps the systems deployed will be less interoperational, less open, and more able to be isolated from each other. Thus, as society thinks and builds under the guidance of a conceptual metaphor, it also reinforces the metaphor, both conceptually and in its embodied manifestations, making any shift away from the initial metaphor more difficult.

These “manifestations” can occur in technological products and practices, such as physical computers, networking protocols, system and network design, or in the structure of programming languages, as well as in policies and regulations produced outside the technical community. This is not to imply that the conceptual metaphors

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13. *Id.*

14. Sally Wyatt, *Danger! Metaphors at Work in Economics, Geophisiology, and the Internet*, 29 SCI. TECH. HUM. VALUES 242, 244 (2004).

15. *Id.*

16. Osenga, *supra* note 6, at 42–43.

guiding the technical community and those guiding regulatory and policy bodies, which seek to have a say in the development of the internet, are the same. They are often not the same, and some could say that they are even at odds. But as the Internet, and networked communications technologies in general, solidify their central place in modern industrialized life, regulatory and policy bodies will attempt to include the development and use of these technologies under their regulatory purview.<sup>17</sup> Part of this assertion of power includes the deployment of normative conceptual metaphors that bring the understanding of these technologies more in line as things that can be regulated. Essentially, if the metaphorical understanding of the Internet is shifted to refer primarily to a thing which can (and should) be regulated, like “infrastructure,” rather than something that cannot (or should not) be regulated, like “a commons,” “a frontier,” or “a sovereign place,” then the internet can more easily be developed in a direction which is amenable to regulation.

The ability to assert dominant metaphors in a discourse is a display of current power and a method of assuring future control. In international internet regulation, the dominant conceptual metaphors implicitly direct developmental priorities, the legality of certain technologies, the viability of particular businesses, and the rights users and stakeholders are considered to have. Conceptual metaphors, operating at descriptive and normative levels, can have outsized impacts on the development of dynamically evolving systems, and they can foreclose alternative lines of evolution or implementation. This paper argues that specific conceptual metaphors found in regulatory documents, produced by several different agencies and working groups, represent shared metaphorical standpoints present in the intentional regulatory community responsible for internet regulation. Moreover, these metaphors have had specific impacts on the direction of development, particularly in the areas of cybercrime regulation and cyberwar policy. These conceptual metaphors are: “The internet is a carrier system,” “data is an object,” “computers are transparent mediators,” and “the internet is geography.” This paper further argues that these metaphors, because of certain ideological biases present within them, have precluded alternative lines of technological development, particularly those oriented towards the internet as an international commons, and they have encouraged those lines of development which replicate existing nation-states’ tensions and conflicts.

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17. *Id.* at 44–45.

### III. DOCUMENTS ANALYZED FOR THE ARTICLE

The research for this article focused on four texts produced by the Council of Europe, the U.N. Working Group on Internet Governance (WGIG), and NATO. The two documents produced by the Council of Europe, the 2001 Budapest Convention on Cybercrime (the “Convention”)<sup>18</sup> and the 2003 Strasbourg Additional Protocol to the Convention on Cybercrime (the “Protocol”),<sup>19</sup> focus on the regulation of crime committed over the internet or other computer networks, with the Protocol specifically focusing on acts of hate speech or xenophobia. The Convention went into effect in July 2004, and, as of March 2014, forty-two states have ratified it.<sup>20</sup> The Convention and the Protocol deal primarily with crimes involving copyright infringement, child pornography, violations of network and information security, and, in the case of the Protocol, hate crimes. The principal aims of the Convention and the Protocol are to harmonize domestic criminal law and procedure regarding computer and network-related crimes in the signatory states, and to facilitate cooperation between signatory states regarding the investigation and prosecution of computer and network-related crime. These documents were selected because they are formative and widely adopted policy documents regarding the international regulation of computer and network-based criminal activities. The conceptual metaphors present in these documents are likely to be adopted by nation-states and other intergovernmental organizations under the mantle of legal harmonization.

The third document analyzed, the Report of the Working Group on Internet Governance (the “Report”), was produced in Geneva in June 2005.<sup>21</sup> The WGIG was tasked with reaching a working definition of the term internet governance, identifying those areas of public policy with relevance to internet governance, and arriving at an understanding of the role of state governments, international organizations, non-governmental organizations, civil society, and other stakeholders in internet governance.<sup>22</sup> The Report was selected due to

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18. Convention on Cybercrime, Nov. 23, 2001, T.I.A.S. No. 13174, E.T.S. 185.
  19. Council of Europe, Additional Protocol to the Convention on Cybercrime, Concerning the Criminalisation of Acts of a Racist and Xenophobic Nature Committed Through Computer Systems, Jan. 28, 2003, E.T.S. No. 189 [hereinafter Additional Protocol].
  20. *Convention on Cybercrime CETS No.: 185 (2014)*, COUNCIL EUR. TREATY OFF., <http://conventions.coe.int/Treaty/Commun/ChercheSig.asp?NT=185&CM=&DF=&CL=ENG> (last visited Mar. 23, 2015).
  21. WORKING GRP. ON INTERNET GOV., REPORT OF THE WORKING GROUP ON INTERNET GOVERNANCE (2005) [hereinafter WGIG].
  22. *Id.* at 4.

its role as a defining document. Though the WGIG is not a regulatory body per se, its duty as an arbiter of definitions of internet governance means that the conceptual metaphors in play in its report have the potential to strongly influence subsequent conceptions of internet governance at the international policy level.

The final document analyzed for this project was the Tallinn Manual on the International Law Applicable to Cyberwarfare (the “Tallinn Manual”).<sup>23</sup> The Tallinn Manual is a non-binding, academic study commissioned by the NATO Cooperative Cyber Defense Center of Excellence, and was published in March 2013. It aims to reconcile existing international law, and the law of war, with the current understanding of cyberwarfare as it may be practiced between states or between states and non-state actors.<sup>24</sup> Although the Tallinn Manual is not an official policy document, it does reflect the dominant interpretations of how existing legal regimes could impact the practice of cyberwar. Any actual occurring acts of cyberwar in the future are likely to be judged against the black-letter law explicated in the Manual. It was chosen for this project for that reason.

Policy documents, such as those analyzed in this project, are written in a specific, specialized language that does not lend itself to the informal and colloquial language that is often the subject of metaphor analysis. In this article, the conceptual metaphors were determined through an examination of how computers and networks were discussed and typified in the texts. Special attention was paid to any underlying assumptions which indicated how the authors of the texts might view the internet more broadly. While these types of texts might not contain particularly vivid metaphoric expressions, they do rely on conceptual metaphors to lend structure and persistence to their views of the internet.

#### IV. THE METAPHORS

##### *A. The Internet is Transit/Carrier Infrastructure*

A primary conceptual metaphor present in the Convention, the Protocol, and the Tallinn Manual is “[t]he internet is transit/carrier infrastructure.”<sup>25</sup> The concept that the internet is infrastructure is strongly present in all four documents. The internet is repeatedly referred to as infrastructure, but what is most relevant is the way in which that infrastructure is classified. Specifically, the activities and

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23. See NATO COOP. CYBER DEFENCE CTR. EXCEL. INT’L GRP. EXPERTS, TALLINN MANUAL ON THE INTERNATIONAL LAW APPLICABLE TO CYBER WARFARE (2013) [hereinafter Tallinn Manual].

24. *Id.* at 1.

25. See *id.*; see Convention on Cybercrime, *supra* note 17; see Additional Protocol, *supra* note 18.

actions referred to in these documents are those that society might otherwise associate with a transit or mail carrier system. Data is “transmitted” as “traffic,” from point to point, following “paths” which can be traced or recorded.<sup>26</sup> The linear directionality and permanence of this metaphor is reinforced by the phrase “chain of communication,” as used in the Convention.<sup>27</sup>

This conceptual metaphor contains within it inherent assumptions about the permanence of the internet as it is currently configured and the desirability of maintaining the current operational status quo. By metaphorically grounding the current internet in infrastructural systems, like the mail carrier system or the road system, this conceptual metaphor shapes society’s view of what the internet is, who should maintain it, and what its purpose is.

This metaphor is very similar to the common “information super highway” metaphor, popularized by Al Gore in the 1990s.<sup>28</sup> Pulling from the source domain of the U.S. Interstate Highway System, the “information super highway” metaphor contained connections to the concept of unimpeded quick travel from point A to point B, making far away locales easily accessible, projecting an image of the internet as something one *travels through*, and, perhaps centrally, suggesting bureaucratic government construction, control, and support.

#### *B. Data/Code is an Object*

If the internet is a transit or carrier system, data and code are the things that it carries. Closely tied to the first conceptual metaphor is this second metaphor: “Data/code is an object.” In understanding data or code as an object, society understands it as something which can be manipulated and have actions taken upon it. The Convention and the Protocol refer to code and data as being “sent,” “collected,” “damaged,” and “lost.”<sup>29</sup> They also refer to passwords and those programs that can circumvent security measures as “items.” Code-as-object can also impact other objects. The Tallinn manual ascribes aggressive, kinetic aspects to code and data, using phrases like “cyber attack,” describing code as being able to “cause violence,” and referring to certain types of code as “weapons.”<sup>30</sup>

The *data/code is an object* metaphor carries with it the implicit assumption that these are discreet things, with readily identifiable

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26. See Convention on Cybercrime, *supra* note 17.

27. See *id.*

28. See, e.g., Vice Pres. Al Gore, Speech Delivered at the Information Superhighway Summit, UCLA (Jan. 11, 1994), *available at* <http://www.ibiblio.org/icky/speech2.html>.

29. See generally Convention on Cybercrime, *supra* note 17; see generally Additional Protocol, *supra* note 18.

30. See Tallinn Manual, *supra* note 22, at 106–07.

purposes and uses. This object can be easily sent and received, is easily distinguishable and separate from other code/data objects, and can impact the physical world just as it can impact the digital world. The data/code object travels within the network, but is not necessarily of the network, just as a car travels on the road but is not the road itself and the letters carried by the postman are not the postman himself. In this way, the object closely interacts with the *internet is a transit/carrier system* metaphor presented above.

### *C. Computers are Transparent Proxies*

The third conceptual metaphor departs slightly from the two just discussed. Present primarily in the Report and the Protocol is the *computers as transparent proxies for humans* metaphor. In this metaphor, the internet is present as a tool used by people via the proxies of personal computers. In addition to relying on this proxy metaphor, the Report also makes use of the internet is a tool metaphor. It repeatedly refers to the internet's tool-like "uses," indicating that the internet is a thing which performs a function, rather than acting as a space or a transit path.<sup>31</sup> In this way, the Report is a metaphorical outlier from the other three documents analyzed. This is, however, to be expected, as the Report is a different type of policy document than the other three, relevant to different areas of internet policy.

The Protocol shows computers as proxies through which actions are committed. Through repetitions of the phrase "through a computer system," the Protocol settles these systems as proxies through which the desired actions of people are seamlessly enacted. This is similar to other popular conceptual metaphors that position personal computers as bodies or homes. This family of conceptual metaphors deeply personalizes actions taken with a computer and in particular actions received through a computer. These computer actions can become very closely tied to actions received directly from another human, or actions directly impacting the sanctity of the body or home. Unsurprisingly, this family of conceptual metaphors is common in texts dealing with computer crime and hackers, due to the analogy of a hacker violating a personal space.

### *D. The Internet has Real-World Geography*

The three conceptual metaphors described above all operate within a supra conceptual metaphor of *the Internet has real world geography*. This metaphoric structure underlies the language used in all four texts, and it symbiotically supports, and is supported by, the other three conceptual metaphors.

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31. See generally WGIG, *supra* note 20; see generally Additional Protocol, *supra* note 18.

The *Internet has real world geography* metaphor contains within it an understanding of the internet as being easily and intuitively divided according to the geographic and political divisions that constitute nation-state borders in the physical world. It assumes that attributing a given code action to a space within the *digital* borders of a nation-state would be simple, like tracing one of the paths referred to as part of the *Internet is transit/carrier infrastructure* metaphor.

Of the four texts analyzed, this metaphor is most overtly present in the Tallinn Manual, as it serves as the unquestioned undergirding of the section on “[s]overeignty, jurisdiction, and control,” as well as the section on “[s]tate responsibility.”<sup>32</sup> These sections assume an online environment that is organized at the levels of infrastructure, as well as active code and protocols in accordance with geographic and political nation-state boundaries. These assumptions allow the rules and guidelines laid out in the manual to rely on traditional ideas of accountability and attribution. Further, the idea of accountability and attribution relies on a physically-based understanding of activities as occurring in a distinct geographic place. This is closely tied to the *data/code is an object* metaphor. The object and infrastructure metaphors, when combined, can make networked-based activities seem much more linear than they typically are and much easier to attribute than is typically the case. Primarily, however, the effect, and perhaps the goal, of the *Internet has real world geography* metaphor is to encourage interactions with the infrastructure, protocols, and content of the internet as if it were already constructed from existing nation-states.

Though this metaphor is most strongly present in the Tallinn Manual, it lies at the core of each of the documents analyzed. The documents refer to nation-states as having special power and control over those aspects of the internet that “reside” within their geographic and political borders. Though the WGIG text makes reference to a “global internet,” and to the internet as the base of a global “information society,” it still gives nation-states a designation as special stakeholders with special responsibilities and privileges regarding networked communications technologies that fall within their borders.<sup>33</sup> The persistence of geographic and political nation-states into the online space would be in the interests of the three international organizations that generated these texts: NATO, the Council of Europe, and the UN Working Group. Therefore, it is unsurprising that each would choose as their basic, guiding metaphorical frame of reference that the Internet is politically organized in an identical way to the real world.

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32. See Tallinn Manual, *supra* note 22, at 15–41.

33. WGIG, *supra* note 20.

## V. THE IMPLICATIONS OF THESE METAPHORS IN POLICY AND INFRASTRUCTURE

The four conceptual metaphors described in the previous section, *Internet is transit/carrier infrastructure*, *data/code is an object*, *computers are human proxies*, and *the Internet has real world geography*, join together to create a standpoint from which internet policy may be constructed. From this standpoint, it is natural to shift existing policy frameworks and structures of power from the offline world into the online world with little adjustment or consideration for how well they might or might not function in the distributed system of the internet. In the context of cybercrime and cyberwar regulation, this has the primary impact and manifestation of simplifying the problem of attribution. Attribution is the process by which those parties responsible for a given action or set of actions are determined. Because the geographic metaphor entails the transit system metaphor, with its implications of linear paths and clean connections between a code-objects origin point and destination, the geographic metaphor views attribution as a relatively straightforward process.

The Tallinn Manual strongly emphasizes attributing actions to networks or computers within nation-state borders.<sup>34</sup> In this case, the concept of attribution simplified to a physical analogue also simplifies what an “action” is within the online environment. In the physical world, actions performed by humans are relatively constrained in their scope of active action. An assault, murder, or street robbery cannot usually take place in more than one legal jurisdiction. An action taken online can include resources, computer processes, accomplices, and impacted individuals across multiple national jurisdictions, which may have different or incompatible perspectives on the legality of these actions. However, this distributed view of actions, accountability, and attribution is not compatible with a conceptual metaphor of the internet as bounded by real-world geography and traversed by code and data-objects traveling linear paths.

In the geographic metaphor, existing states of conflict and interstate aggression can be seamlessly transferred into the online space, along with existing state-determined structures of *enemies* and *bad actors*. Indeed, privileging political and geographic borders over other conceptions of internet organization privileges those bodies of policy that are concerned with state security and stability over those concerned with individual rights, privacy, or autonomy. In this interpretation of the metaphor, the internet is quickly converted into an additional operational zone of warfare, complete with familiar enemies and allies. Because of this ease of conversion, the online environment absorbs and replicates the threat level that exists in the

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34. Tallinn Manual, *supra* note 22, at 15–41.

physical world, perhaps even heightening the threat due to the kudzu-like invasive nature of networked communication technologies. Paradoxically, the geographic metaphor allows the enemies of the nation-state to breach its borders, through the paths of the network, due to the ease with which they can impact those parts of the network which are present within a country's borders. This heightening of perceived threat makes it more likely that countries will privilege state security concerns as they manifest on the network over other, perhaps more individual, rights-oriented concerns.

The geographic metaphor has implications for the future design and construction of infrastructure as well. As it conceptualizes the internet as adhering to nation-state boundaries as present in the real world, that geographic metaphor encourages a fractured development of internet infrastructure and an uneven, poorly distributed pace of innovation.

The geographic metaphor encourages nation-states to construct their internal telecommunications networks with minimal connection to the networks in other countries, which could in turn further enable nationwide site blockages, censorship, or even shut-downs of an entire country's online connection, as has already been seen in Egypt, Nepal, Burma, China, Syria, and Libya.<sup>35</sup> The U.S. Department of Homeland Security has in place a "kill switch" plan, which would enable the U.S. government to shut off internet connectivity and cell phone communications within the U.S.<sup>36</sup> When the network infrastructure present in a country is viewed as the unequivocal possession and responsibility of that country, an isolationist internet policy becomes possible. Such a view is inherently encouraged by the geographic metaphor, as well as the assumptions about attribution and locality of action that are implied therein. "National" internets, such as China's Great Firewall,<sup>37</sup> could become the assumed regulatory norm. Perceived violations of a state's sovereignty via incursion into their internet infrastructure could speed up the movement towards national internets, as seen in the fallout from the revelations of the National Security Agency's international information-gathering activities. In response to those revelations, several nations have broached the idea

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35. Jillian C. York, *2013 in Review: The Worrying Trend of Internet Shutdowns*, EFF DEEP LINKS BLOG (Dec. 27, 2013), <https://www.eff.org/deeplinks/2013/12/2013-review-worrying-trend-internet-shutdowns>.

36. See Dana Leibelson, *The Government's Secret Plan to Shut Off Cellphones and the Internet, Explained*, MOTHER JONES (Nov. 26, 2013), <http://www.motherjones.com/politics/2013/11/internet-phone-kill-switch-explained>.

37. *The Enemies of the Internet Special Edition: Surveillance*, REPS. WITHOUT BORDERS FOR FREEDOM INFO. (2012), <http://surveillance.rsf.org/en/china/>.

of shifting to a national-internet infrastructure established within their own borders.<sup>38</sup>

The shift to national internets may, in turn, lead to the development of country-specific technical standards and the forking of development projects across country lines. Presumably, it would then fall to international technical organizations, like the Internet Society, and their subsidiaries, like the Internet Engineering Task Force, to harmonize these project to ensure interoperability across borders.<sup>39</sup> Without such harmonization efforts, the project of national internets threatens to fork internet communications protocols, just as national electricity standards have forked power plugs.

By inherently encouraging a fractured and nationalized infrastructure, the geographic metaphor preempts alternative interpretations of infrastructure ownership and responsibility. In the caretaker model, for instance, the distributed infrastructure of the internet is held in common by all nation-states, and each individual nation-state acts as a caretaker for those parts of the physical infrastructure which lay within their national borders.<sup>40</sup> The geographic metaphor also subtly discourages the equitable spread of infrastructural and technological innovation, as each nation's internet is viewed to be operating on its own or in competition or conflict with other nations' internets. This can, in turn, lead to an increase in corporate espionage and ratcheting up of intellectual property restrictions and piracy. The geographic metaphor encourages the conception of individual internets as products of specific cultures and communities. This could potentially be useful to those governments and activists seeking to protect national or regional cultures from global assimilation or cultural domination by Western industrialized media or industry.

## VI. CONCLUSION

Lakoff and Johnson argue that conceptual metaphors and metaphoric expressions make up the foundations of how society understands its world and are the essential medium through which

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38. John Blau, *NSA Surveillance Sparks Talk of National Internets*, IEEE SPECTRUM (Jan. 23, 2014), <http://spectrum.ieee.org/telecom/internet/nsa-surveillance-sparks-talk-of-national-internets>.
39. *See Who We Are*, INTERNET SOC'Y (2014), <http://www.internetsociety.org/who-we-are/mission>; *see also The IETF Standards Process*, IETF, <http://www.ietf.org/about/standards-process.html> (last visited Mar. 31, 2015).
40. *See* Erick Schonfeld, *Vint Cerf Wonders if We Need to Nationalize the Internet*, TECH CRUNCH (Jun. 25, 2008), <http://techcrunch.com/2008/06/25/vint-cerf-wonders-if-we-need-to-nationalize-the-internet/>.

many people express themselves.<sup>41</sup> Though conceptual metaphors are an unavoidable part of existing as thinking humans in the everyday world, they are also central to the construction and implementation of policy, particularly around complex technological systems like the internet. Without robust conceptual metaphors to support society's understanding, it is quite possible that policymakers would never arrive at a complete enough understanding of the systems they are attempting to regulate and the directions in which they are evolving to effectively draft and implement meaningful policy.

However necessary conceptual metaphors are for the functional maintenance of practical policy, it is equally undeniable that these conceptual metaphors, once effectively implemented, can have a strong influence on the direction in which internet policies, and the systems they regulate, develop. Metaphors have as much power to direct the evolution of dynamic systems, like the internet, as they do to render intelligible their current state. A conceptual metaphor which maps the internet as a global commons could have markedly different impacts on international regulation and infrastructure construction than one which maps the online space as a marketplace or geographic and political reflection of the real world.

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41. Lakoff & Johnson, *supra* note 1, at 3.

