"The Free Use of our Faculties":

Jefferson, Cyberspace,

and the Language of Social Life

David G. Post

"Life must be lived forward, though it can only be understood backwards."

Soren Kierkegaard.

Abstract/Summary The Internet is a language, a language that allows individuals to write texts (in a wide variety of other languages) and to communicate the meaning of those texts to others. Cyberspace is, in that very real sense, an entirely imagined world – a “collective hallucination,” as one particularly perceptive observer nicely put it, a collection of stories.

Like many others who spend their time thinking about these things, I find questions about who should make the law here, and how law should be made, and what kind of copyright law would be best, and how many top-level domains we need, and what we should do about data mining and preference matching and the Secure Digital Music Initiative and geographical filtering software, and, and the like almost impossibly difficult.

Life must be lived forward, but it can only be understood backwards. My premise is that looking backward to try to understand how others looked forward will help us to make sense of the choices we face in cyberspace.

Thomas Jefferson spent a lot of time looking forward, and he had a particular vision when he did so. It is sometimes difficult to see its outlines clearly, because he was a pretty odd character in many ways, his intellectual pursuits so varied (and, frankly, so seemingly bizarre) that it is difficult to reconcile them with the more familiar side of the man and his thought.

---

1 This paper was prepared for the symposium Constitutional Law and the Internet at Drake University School of Law, February 18, 2001, and I thank the organizers of that symposium, most especially Tom Baker, for the invitation to participate. A modified version of this article will be part of a forthcoming book on Thomas Jefferson and cyberspace tentatively entitled Jefferson’s Moose: Notes on the State of Cyberspace. My thanks to Dawn Nunziato for her many contributions to my thinking about this problem, and to Esther Bodek and Lisette Young for research assistance.

2 Temple University Law School. Dpost@vm.temple.edu

3 The Concluding Unscientific Postscript to the Philosophical Fragments (1846).
But if we’re thinking about how, going forward, law should be made in this new language-place, this-place-that-is-noplace, we could do worse than to try to understand what Jefferson thought about how, going forward, law should be made in his “new world,” a “new world” that looked as bizarre to him and his contemporaries as cyberspace does to us.

Recapturing Jefferson’s vision requires recapturing the shape of the intellectual battles in which he was engaged. Many of these seem quaint to us in retrospect. Jefferson had a great deal to say about language and its control. He was engaged in one of the major intellectual battles of the 18th century: who controls English, or French, or the other languages of the world? How can they be controlled? What happens if they’re not? Surely they’re too important, too indispensable as vehicles for commerce and of learning, to leave them to the uncoordinated chaos of the mob, away from the experts and outside the State’s apparatus of control.

We don’t think those are very interesting questions anymore – do we? Nobody seriously argues anymore that the Academie Francaise has the authority, or should be given the power, to fix the French language and to enforce its dictates on French speakers – do they?

Partially, of course, that’s because Jefferson (and others, of course) helped to win that battle, to create a kind of self-evident truth about the nature of freedom and the nature of language. But apparently we have to fight the battle all over again when confronting the languages of cyberspace. We again hear that they are too important, too indispensable as vehicles for commerce and of learning, to leave their growth and future development entirely to the uncoordinated chaos of the mob, away from the experts and outside the State’s apparatus of control. If it seems self-evidently wrong in retrospect, why does it not seem self-evidently wrong in prospect? I’m sure I’m missing something, but I don’t know what it is.

**THE STORY**

[In an earlier chapter I describe the formation of the Internet Corporation for Assigned Names and Numbers – ICANN – and its role in the management of the Internet’s domain name system. An abbreviated summary:

For there to be “an Internet” – for the Internet to exist as a single coherent network -- there must be some mechanism that insures that messages get routed in a predictable fashion. The Internet uses a particular naming system for that purpose. You can send a message to janedoe@xyz.com, or you can send a request to view the webpage at www.school.edu (“http://www.school.edu”) and it gets routed to the “right” machine – each of those addresses is, somehow, associated unambiguously with a particular machine on the network. How does that happen?

The first thing to know is that each machine on the Internet is assigned a unique numerical address, known as an “IP number”; as I sit here writing this, I am connected to the Internet through Temple University’s network, and my IP number is 156.247.255.5.

In a real sense, you are not and cannot be “on the Internet” unless you have a machine, or you have a machine that is connected to a machine, that has an IP number.]

---

4 Put aside (just for the moment) the question how this unique number gets assigned; it just does.
The machines whose job it is to move messages around – the Internet routers – have to know where a message is to be sent. The routers require that every message have an IP number attached to it; so that they can move it along to its intended destination. That’s just the rule: If a message doesn’t have an IP number attached to it, it will be discarded.

In the old days, IP numbers were placed on messages by hand; good, old-fashioned hard work. You actually had to place the IP number of the intended recipient into your message if it was to be delivered safely. But those were the old days. Now, we use names. Putting a name on an email message or an “http” request is like putting your friend’s social security number on the outside of an envelope instead of his street address and expecting the Post Office to deliver it. How does an IP number get attached to your messages to janedoe@xyz.com and www.school.edu if you no longer do so yourself?

Names are associated with numbers on the Net by means of what Tony Rutkowski calls a “magical mystery tour.” Your message (“http://www.school.edu”) first stops off at a machine known as a “DNS server,” (DNS standing for “Domain Name System”). DNS servers read messages from right to left. The DNS Server sees that your message is addressed to a recipient in the *.EDU top-level domain, so it knows that it must first find out where addresses in the *.EDU domain are stored. It does this by sending a message to a machine known as a “root server”: “Where are addresses within *.EDU domain stored?”

The root server looks in its database sends back the IP number of the machine it has designated as “EDU domain server.” The DNS server takes this IP number and sends the EDU domain server a message: “Where are addresses within school.edu stored?” The EDU domain server looks in its database and sends back the IP number of the entity listed under “school.” [If it doesn’t find anything, it sends back “Not Found”]

The DNS server takes this IP number and sends this machine a message: “What is the IP number for www.school.edu?” School.edu replies with yet another IP number, and we’re finally finished. The DNS server has now completed its task; having received the IP number for the machine it was looking for (www.school.edu), it places that number into the “header” of your message – remember your message that started all this? -- and sends it on its way.

How does this all work as smoothly as it does? Who is in charge of the root server? How does whoever is in charge of the root server decide which machines are responsible for addresses in the *.EDU, *.COM, *.ORG, or any other top-level domain? Who controls those machines (and the database of names and addresses contained in them)? And what makes the root server “the” root server? Why do the many thousands of Internet Service Providers, operating the many thousands of DNS servers worldwide, all
use the same root server?

In the early days of the Internet, of course, no one outside the small cadre of engineers that was putting the system together cared very much about the answers to these questions. The United States government had long operated the root server (a holdover from the days that the Internet was a Defense Department project), and had worked with something known as the Internet Assigned Numbering Authority (IANA) — a loosely-structured group of engineers led by the late Jon Postel—to organize the necessary data and to see that the hierarchy of machines and databases in this system were being properly managed.

As long as it all seemed to be working smoothly enough; who cared what was going on behind the Wizard’s curtain? Who noticed when, in 1992, as the extraordinary growth of the Internet began to outstrip the management capacity of this (largely volunteer) operation, the U.S. government engaged a private firm, Network Solutions, Inc. (NSI), to manage and maintain both the root server and the databases and domain servers for the COM, ORG, and NET domains?

But slowly, as more and more people began to realize that the Internet was a Really Big Deal (and that these funny “domain name” things might actually be of real value), more and more people started to pay attention to all of this, and this arrangement began to come under increasing fire from many quarters. The government and NSI found themselves increasingly under attack from within and without the Net community-- by those challenging NSI’s apparent monopoly control over these increasingly valuable top-level domains, by trademark owners concerned about domain names that appeared to infringe upon their valuable trademark rights, and others.

In 1996, as the expiration date of the government’s contract with NSI approached, the Commerce Department announced that the government wanted to get out of the DNS management business entirely. The government proposed transferring responsibility for management and operation of the DNS, including management of the root server, to a private non-profit corporation controlled by “Internet stakeholders” themselves. ICANN, a California non-profit corporation, was formed in 1997 in response to Commerce’s privatization proposal and, by contract with Commerce executed in September of that year, took over responsibility for operation of the DNS in the fall of that year and retains it today.]

WHERE I LEFT OFF

Seven dog-years, 3 or 4 Internet-years, and one astronomical year ago, I wrote a response to Lawrence Lessig’s book Code and Other Laws of Cyberspace. As I read it, Lessig’s key insights were these: Law in cyberspace will increasingly depend upon, and
be increasingly intertwined with, net “architecture” – the codes and protocols that together define and determine the manner in which bits are permitted to move about the global network. The “architecture of cyber-place(s) . . . determines what they are,” and “the architecture of those places is determined by their code,” because it is code that most effectively constrains, or regulates, behavior in this space; it is, as Lessig memorably put it, the code/architecture of the net, not the First Amendment, has been the primary protector of free speech in cyberspace.

Different codes, though, produce different architectures, and different architectures embed different values, different visions of the Good. The net has no “true” architecture, no inherent form that will exist independently of the architectures we build into it. We have architectural decisions to make here, many of them; how are they to be made? Who controls these architectures? How do we see to it that values that are important to us – of privacy, of freedom – are preserved here? We’re all systems engineers now – at least, if we want to think intelligently about these questions. How can we find and implement the right architectures – however we might define what those are?

The questions are deeply important, and enormously difficult. We need, Lessig argued, “a plan,” and we need “politics”:

“Ordinarily, when we describe competing collections of values, and the choices we make among them, we call these choices “political.” They are choices about how the world will be ordered and about which values will be given precedence. Choices among values, choices about regulation, about control, choices about the definition of spaces of freedom—all this is the stuff of politics. Code codifies values, and yet, oddly, most people speak as if code were just a question of engineering. Or as if code is best left to the market. Or best left unaddressed by government.

But these attitudes must be mistaken. . . . We should not accept the idea that any part of what defines the world as it is, is removed from politics. . . . Politics is that process by which we collectively decide how we should live, . . . the process by which we reason about how things ought to be.5

---

5 Lessig, Code at [ ].
I wasn’t convinced. Some things, I suggested, make their way best without a plan, and without politics, without being put before a collective for decision-making, indeed without reason. The English language – any language would serve for this purpose – was such a thing. Language itself is “the original, and still probably the most powerful, value-laden code/architecture of them all”:

“The semantic and syntactic structures of English (and of all natural languages) are deep architectural constraints on our social life . . . . Language is not just “a way of communicating propositions about the world,” it is “a constitutive social activity,” a means by and within which we “construct social reality.” Like the network protocols they so closely resemble, these semantic and syntactic structures embed important and often fundamental values throughout.”

I suggested that it was “obvious” – I might now change that to “self-evident” – “that we do not, and that we should not, subject [the] semantic and syntactic structures [of the English language] to the collective for decision-making.”

“English will evolve best not by subjecting it to a series of decisions by the collective empowered to impose its will on all, but by an aggregated series of individual and sub-group decisions. We do not have, and we do not want, the Ministry of Semantic Propriety, or our elected representatives, or a specially constituted board of experts, or even the law professors, to make a “plan” about the proper direction(s) that English may take or to make decisions for us in accordance with that plan. We do not, in fact, have or need a “plan” at all. We are, and should be, deeply suspicious of those who claim to have such a plan, and positively terrified of those who assert that they need to enlist the coercive powers of the State to implement that plan. If there is a serious alternative to the invisible hand that is suitable for this task, I am not aware of it.”

Where I’m Going

I want to take the opportunity presented by this symposium to think about this

---

6 Post, at [ ].

7 Id., at [ ].
analogy a bit more deeply. Some things are simultaneously both obvious and interesting, and the more I pondered the “obvious” point I had tried to make, the more interesting it seemed. Why don’t we have a plan for English? What would happen if we did?

The more I thought about it, the more useful the language metaphor seemed to become for thinking about the questions presented by cyberspace. The global network is so bound up with language that we sometimes fail to see the connections clearly, and I’m not even sure if “metaphor” is the right word to describe the relationship. The Internet is a language, a set of specific syntactical rules (TCP/IP) that allow packets of information consisting of inherently unintelligible and arbitrary units to carry meaning and to be understood by other speakers. It is a kind of creole, or pidgin, designed precisely for the purpose of allowing the exchange of information between entities whose “native languages” – i.e., the operating system languages in which the programs that they ordinarily run must be written – are mutually unintelligible.8

And not only is the Internet itself “just a language,” its constituent units are themselves built up out of other, lower-level languages. You build a web page by writing a text in one (or more) of many available languages – HTML, XML, java, etc. It's just stories that have been composed and written down, an entirely imagined world, conjured up by and out of the new languages that we have programmed our computers to “speak.”

In this world, there’s nothing but “speech,” and in a world like that every issue of law and policy is about speech, and implicates “the freedom of speech.” The insertion of the single line of code in the rootserver file to create a *.UNION, or a *.SUCKS, or a *.BUSINESS, or a *.XXX domain; the use of geographical filters to alleviate the problem of Internet jurisdiction, or content filters to create cyberspace zones free of objectionable content; the use and spread of encryption technology; the scope and availability of patent protection for “business methods” incorporated into software; the allowable uses of personal data collected and aggregated together on the network, and the allowable scope of the anonymizing tools that can ward off the collection of that information; the use of electronic payments and the enforcement of tax laws; the ways that copyrighted information can and should be protected. All, somehow, seem to

8 [Discuss “end-to-end” design.]
involve questions the language(s) we can speak, or must speak, or will be prohibited from speaking here.

What are we to make of this? What does it mean? How do we think about law and governance in an imagined world like this?

To be candid, I’m not at all sure; I am a bit suspicious of anyone who is. We can ignore it all and just get on with things, I suppose; we can simply declare that cyberspace is “functionally identical” to “activity mediated by other means, such as mail or telephone or smoke signal,” \(^9\) that cyberspace interactions and transactions are really “no different” than their real space counterparts. But I think that somehow we’d be missing something important if we did that.

**Looking for Help**

“Doubt is wisdom. Ignorance is preferable to error; he is less remote from the truth who believes nothing, then he who believes what is wrong.”

Thomas Jefferson

I need a guide to help me make sense of this. Lessig put it this way:

“I find impossibly difficult the range of new questions raised about monitoring action in cyberspace -profiling, and preference matching, and cookie collection, and experience tailoring - these are hard questions because in an important sense, they are new questions. . . .

“In this context, what we need - we, who aspire to be academics, who aspire to work things out - is permission to work things out freely. We need a space where we can experiment with ideas without condemnation reigning down around us. . . . [T]his is cyberspace, where no one has the right to declare truth is on their side; and where no one should claim the right to condemn. This is a space where we need the space to try out different, and even heretical, ideas.

In this space, the heroes will be lunatics like David Brin - arguing that, in the transparent society, we give up on the tradition to hide; or crazies like Simson Garfinkel, who in a wonderful new book, *Database Nation*, is crazy enough to

---

\(^9\) *Id.*, at 1240.
argue that a national databank run by the government might protect privacy better than a world without regulation of personal information. . . . We need to imagine these problems differently, and we need to encourage people to imagine them differently. . . .

Thomas Jefferson will serve well as one of the “lunatics” from whom guidance can be sought. Jefferson, of course, was not entirely crazy. But the “moonshine philosopher of Monticello” (as Thomas Pinckney called him) certainly had an odd streak. Read Notes on the State of Virginia if you don’t believe me.\textsuperscript{10} He filled his home with

\textsuperscript{10}Notes on Virginia was the only book Jefferson would publish in his lifetime, and he filled it with astonishingly detailed descriptions of American flora and fauna, the condition of its fisheries and the state of its soils, the depth of its rivers and the height of its mountains:

- [Twenty] pages on the rivers of Virginia, with observations on the navigability of each (“The Patowmac is 7 ½ miles wide at the mouth, 4 ½ miles at Nomony bay, 1 ¼ at Alexandria. Its soundings are 7 fathom at the mouth, 5 at St. George’s island, 3 at Swan’s point, and thence to the falls 13 miles above Alexandria. The falls are 15 miles in length, and of very great descent, and the navigation above them for batteaux and canoes is so much interrupted as to be little used . . .”).
- A catalogue of the native plants of the New World, divided into four categories (medicinal, succulent, ornamental, and “useful for fabrication”), with both the scientific [Linnaean] and popular name of each (because the latter alone might not convey precise information to a foreigner);
- A list of 101 birds known to live in Virginia, again with Linnaean and popular names and with cross-references to the description of each species in the zoological works of Catesby and Buffon (accompanied by apologies for the many others which have not yet been described and classed);
- Five years of data on the rainfall and temperature at Williamsburg (along with an analysis of wind patterns during the same period);
- A list, and extended description, of all of the Indian tribes then known to be inhabiting Virginia and its environs, along with estimates of the population of each tribe and their most location;
- A table showing the quantity and dollar value of Virginia’s trade in tobacco, wheat, Indian corn, tar, pelts, flax seed, sturgeon, brandy and whisky.
- A table showing the population in each county in Virginia;
- A list of all the enactments of the English parliament relating to the colonization of the New World, from the Act of March 5, 1498 to the deed of six Indian Nations to the Crown for
what was then the world’s most complete private collection of plant seeds and animal skulls. He could, and at the drop of a hat would, expound for hours about the cultivation of the olive tree, or the new varieties of grapes and rice that he introduced in the New World. He had the complete carcass and skeleton of a moose shipped to him while he was stationed in Paris, and he had it reassembled in the ornate lobby of his residence at the elegant Hotel de Langeac. He personally compiled grammars and vocabularies for over fifty Native American languages. He painstakingly kept over twenty years of daily temperature, wind, and humidity readings at Monticello. Every year, for over fifty years, he recorded the date of the first appearance in the Spring of dozens of species of bird and bug. He took three months off, while serving as America’s first Secretary of State in the cabinet of George Washington, to go on a botanizing excursion in New England with his friend James Madison. He was (and he said he was to anyone who asked) more excited about tending his garden than serving as Chief Executive of the United States. And on July 4, 1776, he just had to record the purchase of a new thermometer in his diary.

Jefferson was the brilliant, though eccentric, uncle who lives up in the spare room on the 3d floor, surrounded by all his junk. If we think about this side of him at all, it is generally with a kind of bemused awe: Jeez! Look at all this stuff up here, willya! This guy’s unbelievable!

Jefferson may have something useful or interesting to say about the languages of cyberspace. If life must be lived forwards, we can look backwards to see how we might look forwards. The New World seemed as peculiar and bizarre to Jefferson, and to his contemporaries, as cyberspace often does to us, and the questions we face in thinking about how life should be lived in cyberspace look a lot like the questions he, and they, faced in thinking about how life was going to be lived on the vast unexplored American continent.

**History**

Jefferson, as it turns out, was enormously interested in, and had a great deal to say

- certain lands and settling a boundary of November 5, 1768;
- The history of the Constitution of Virginia;
- The location of known veins of gold, iron, lead, copper, coal, marble, limestone, salt, sulphur, and other minerals.
about, human language. No surprise there; Jefferson seems to have been enormously interested in, and had lots to say about, just about everything; I haven’t yet found tried to look up a subject that was not in the Index to his Collected Papers. But in a crowded field of contenders for the title “the subject about which Jefferson cared most,” the study of language stands out – not, perhaps, at the top of the list, but reasonably high up.

He can, in fact, lay plausible claim to being America’s first serious comparative linguist. He was among the first people on either side of the Atlantic, for instance, to study the Anglo-Saxon language in a systematic way. “I pretend not to be an Anglo-Saxon scholar,” he wrote,

“... but from an early period of my studies, indeed, I have been sensible of the importance of making it a part of the regular education of our youth...; I was led to set a due value on the study of the Northern languages, and especially of our Anglo-Saxon, while I was a student of the law, by being obliged to recur to that source for explanation of a multitude of law-terms. ... and at different times, as leisure permitted, I applied myself to the study of it, with some degree of attention. But my life has been too busy, in pursuits of another character to have made much proficiency in this.”

He did find time, while a student at the College of William and Mary, to begin tracing the Anglo-Saxon roots of English words and arranging those roots alphabetically to produce a kind of Anglo-Saxon/English dictionary -- the first of its kind.

And his interest in Native American languages was, if anything, deeper and more intense. He compiled what was without question the most comprehensive collection of American Indian vocabularies:

Very early in life... I formed a vocabulary of such objects as, being present everywhere, would probably have a name in every language; and my course of life having given me opportunities of obtaining vocabularies of many Indian tribes, I have done so on my original plan, which though far from being perfect, has the valuable advantage of identity,
of thus bringing the languages to the same points of comparison.\textsuperscript{13}

He devoted a chapter in \textit{Notes on Virginia} to a preliminary comparative analysis of the Amerindian languages, distinguishing the different original stocks of Indians on the basis of their languages and establishing the connection of the American Indians with the inhabitants of eastern Asia.\textsuperscript{14} Through a bizarre and unfortunate turn of events, he was never able to complete and publish the massive and comprehensive comparative analysis of Native American languages that he been preparing for over thirty years.\textsuperscript{15}

\begin{flushleft}
\textsuperscript{13} Jefferson to John Sibley, 5.27.1805.  See also Jefferson to Benjamin Hawkins 3.14.1800 (“I have . . . never failed to avail myself of any opportunity which offered of getting their [American Indian] vocabularies. I have now made up a large collection, and afraid to risk it any longer, lest by some accident it might be lost, I am about to print it. But I still want the great southern languages, Cherokee, Creeks, Choctaw, Chickasaw.”)

\textsuperscript{14} The strikingly large number of “radical tongues” found on the American continent led him to the novel conjecture that the American Indians might be older than the Asiatic peoples and that the original home of man might therefore have been in America.

“[I]mperfect as is our knowledge of the tongues spoken in America; it suffices to discover the following remarkable fact: Arranging them under the radical ones to which they may be palpably traced, and doing the same by those of the red men of Asia, there will be found probably twenty in America, for one in Asia, of those radical languages, so called because if they were ever the same they have lost all resemblance to one another. A separation into dialects may be the work of a few ages only, but for two dialects to recede from one another till they have lost all vestiges of their common origin, must require an immense course of time.”

\textit{Notes on Virginia}, at [ ].

\textsuperscript{15} It’s a rather sad story, actually. In 1809, Jefferson left Washington, DC, having served his two terms as President of the United States, to return to Monticello, where he was to spend the final 17 years of his life. He described what happened on that journey home in a letter to Dr. Benjamin Barton, who had written to Jefferson requesting any information he might have on the grammars and vocabularies of certain Native American tribes.

“[I] would with all possible pleasure have communicated to you any part or the whole of the Indian vocabularies which I had collected, but an irreparable misfortune has deprived me of them. I have now been thirty years availing myself of every possible opportunity of procuring Indian vocabularies to the same set of words: my opportunities were probably better than will ever occur again to any person having the
As always the case with Jefferson, it’s worth asking: why was he so interested in all of this?

There was, first (and possibly foremost), his desire to unravel the origin of the Native American tribes:

“Great question has arisen from whence came those aboriginals of America? Discoveries long ago made were sufficient to show that the passage from Europe to America was always practicable, [and] the late discoveries of Captain Cook, coasting from Kamschatka to California, have proved that if the two continents of Asia and America same desire. I had collected about fifty, and had digested most of them in collateral columns, and meant to have printed them the last year of my stay in Washington.

The final piece of this work was going to be the vocabularies for the Western tribes that Meriwether Lewis had compiled on the Lewis and Clark expedition. But not having yet digested Captain Lewis’s collection, nor having leisure then to do it, I put it off till should return home. The whole, digest as well as originals, were packed in a trunk of stationary, and sent round by water with about thirty other packages of my effects. [W]hile ascending the James River, this package, on account of its weight and presumed precious contents, was singled out and stolen. The thief being disappointed on opening it, threw into the river all its contents, of which he thought he could make no use. Among these were the whole of the vocabularies. Some leaves floated ashore and were found in the mud; but these were very few, and so defaced by the mud and water that no general use can ever be made of them.

He had, after receiving Barton’s letter, looked through the salvaged material

“. . . and I was very happy to find, that the only morsel of an original vocabulary among them was Captain Lewis’s [vocabulary] of the Pani language, of which you say you have not one word. I therefore inclose it to you, as it is, and a little fragment of some other, which I see is in his hand writing, but no indication remains on it of what language it is. It is a specimen of the condition of the little which was recovered.”

“I am the more concerned at this accident, [because.] of the two hundred and fifty words of my vocabularies, and the one hundred and thirty words of the great Russian vocabularies of the languages of the other quarters of the globe, seventy-three were common to both, and would have furnished materials for a comparison from which something might have resulted. Although I believe no general use can ever be made of the wrecks of my loss, yet I will ask the return of the Pani vocabulary when you are done with it. Perhaps I may make another attempt to collect, although I am too old to expect to make much progress in it.

Jefferson to Benjamin Barton, 9.21.1809.
be separated at all, it is only by a narrow strait. So that from
this side also, inhabitants may have passed into America;
and the resemblance between the Indians of America and
the eastern inhabitants of Asia, would induce us to
conjecture, that the former are the descendants of the latter,
or the latter of the former.

Their vague and imperfect traditions can satisfy no mind on
that subject. *I have long considered their languages as the
only remaining monument of connection with other nations,
or the want of it, to which we can now have access.* . . . A
knowledge of their several languages would be the most
certain evidence of their derivation which could be
produced. In fact, it is the best proof of the affinity of
nations which ever can be referred to.

Were vocabularies formed of all the languages spoken in
North and South America, preserving their appellations of
the most common objects in nature, of those which must be
present to every nation barbarous or civilized, with the
inflections of their nouns and verbs, their principles of
regimen and concord, and these deposited in all the public
libraries, it would furnish opportunities to those skilled in
the languages of the old world to compare them with these,
now or at any future time, and hence to construct the best
evidence of the derivation of this part of the human race.  

There was more than idle curiosity at work here. The explicit goal of all this
work was to establish as firmly as possible the truth of the equality that he had
proclaimed as “self-evident” in the Declaration of Independence. “It is easy to forget,”
Daniel Boorstin tells us in his wonderful study of Jefferson’s “lost world,” that

“... the assertion of human equality in the Declaration of
Independence was not a direct statement of a moral
principle, but rather of scientific and historical fact from
which the principle was supposed to follow: ‘All men were
created equal.’ The truth which the authors declared self-
evident was not simply that men ought to be treated as
equals nor that they were born equal: they actually had
been created equal. This form of the statement plainly
declared that the equality of men was derived from the facts

16 Jefferson, *Notes on Virginia*, at [ ].
of the creation and therefore was to be confirmed by the evidence of natural history.”

The point of all this work was the “desire to confirm the common origin of men” by reconstructing the Ur-humans speaking the Ur-language, the common originating point for the species as a whole. To show that all men were members of the same species would be “the most striking possible confirmation of the indestructible equality of humankind”:

“If the Jeffersonian was to demonstrate the unity of the human species, it was incumbent on him -- by the canons of his own anthropology -- to prove somehow that all men were descended from a single pair of original parents. . . . As the Diaspora or Exile -- an event in social history -- has dominated Jewish thought, so the dispersion of the whole human species from a single source -- considered as an event in natural history -- set the tone of Jeffersonian anthropology. . . . Here he found his clue at the same time to the equality of man and to man's special destiny for the kind of work undertaken in America. . . . He grasped any clues -- however meager or ambiguous -- in man's present social equipment which might show a trace of the ancient community of mankind. Any such fact seemed to increase the probability of the descent of all men from the same parents. For example, if it could be shown that the surviving languages (especially those remotest from the hypothetical ancient cradle of mankind) all stemmed from some common ancient source, the common origin of mankind would be corroborated.

Jefferson’s life-long immersion in language studies was thus undertaken always “with an eye to the light they might throw on the source of mankind”; the “vitality of the

---

17 Boorstin, at ___. That this particular manner of declaring the equality of all humans was not a verbal accident is evidenced in the less ambiguous words of Jefferson's earlier draft of the Declaration: “We hold these truths to be sacred and undeniable, that all men are created equal and independent, that from that equal creation they derive rights inherent and inalienable.” See [Wills, Inventing America at [ ]]; Maier, American Scripture, at [ ]; Boorstin, at [ ].

18 Boorstin, at [79].

19 Boorstin, at [ ].
hypothetical language of Adam” inextricably linked to the “faith in human equality, and to the expectation that this faith would be confirmed by science.”

The search was ridiculed by contemporaries and biographers – the crazy uncle’s at it again! To hardheaded realists like John Adams, speculation on the source of the primeval migrations of men seemed rather silly:

“Whether serpents’ teeth were sown here and sprung up men; whether men and women dropped from the clouds upon this Atlantic island; whether the Almighty created them here, or whether they emigrated from Europe, are questions of no moment to the present or future happiness of man. Neither agriculture, commerce, manufactures, fisheries, science, literature, taste, religion, morals, nor any other good will be promoted, or any evil averted, by any discoveries that can be made in answer to these questions.”

It is, however, a strikingly modern conception – that languages could be unraveled in this way, that from a study of existing human languages we could construct what we would now call a “phylogenetic tree” showing the actual historical divergence of one language, and one people, from another.

It is difficult, from our exalted post-Darwinian 21st century perch, to appreciate just how radical this idea was at the time. That languages evolve at all over time, given what was assumed by many to be the literal truth of the Biblical story of the Tower of Babel, was difficult enough for many people to believe; that they change systematically – that the differences between two languages could serve as an accurate guide to the amount of time that had elapsed since they shared a common origin– was an idea that only a crazy or a lunatic could hold.

20 Boorstin, at 80.

21 Adams to Jefferson, [ ].

22 It was not just the aboriginal languages of the Americas that could be analyzed in this way; a comparison of their vocabularies would enable us to determine “[h]ow many ages have elapsed since the English, the Dutch, the Germans, the Swiss, the Norwegians, Danes and Swedes have separated from their common stock.”

23 And yet, of course, it was, as we know now, correct. But it was a serious intellectual challenge then, and it remains a serious intellectual challenge today, as recent work in the effort to uncover the ‘proto-
**Interoperability**

But all that, interesting though it is, was only a part of story behind Jefferson’s linguistic enterprise. Languages are funny things; they’re only useful when they have users; the “best” language (however one might define it) is a worthless piece of junk if nobody speaks it. Jefferson understood these “network externalities,” the increase in a language’s value as it attracts more speakers, as a speaker himself of (and advocate for) what he referred to as a “universal language” – the Linnaean classification scheme for the plant and animal kingdoms, the now-familiar Kingdom-Phylum-Class-Order-Family-Species classification system for the natural world. Before Linnaeus had published his *Systema Naturae* in 1753, the world’s naturalists each had come up with his own classification systems along “such lines of division as struck him most favorably.”

“Fortunately for science, [Linnaeus] conceived in the three kingdoms of nature, modes of classification which obtained the approbation of the learned of all nations. *His system was accordingly adopted by all, and united all in a general language.*”

Linnaeus’ system had its flaws; it was “liable to the imperfection of bringing into the same group individuals which, though [similar] in the characteristics adopted by the author for his classification, yet have strong marks of dissimilitude in other respects.” But “every mode of classification must be liable” to this objection:

“Nature has not arranged her productions on a single and direct line. They branch at every step, and in every direction, and he who attempts to reduce them into departments, is left to do it by the lines of his own fancy. Nature has, in truth, produced only units through all her works. Classes, orders, genera, species, are not of her work. Her creation is of individuals. No two animals are exactly alike; no two plants, nor even two leaves or blades of grass; no two crystallizations. And if we may venture from what is within the cognizance of such organs as ours, to conclude language’ (and indeed to debate whether such a thing ever existed) goes on with, if anything, more vigor than ever. See discussions in [Pinker, *The Language Instinct*]

24 Jefferson to Dr. John Manners, 2.22.1814.

25 *Id.*
on that beyond their powers, we must believe that no two particles of matter are of exact resemblance.

This infinitude of units or individuals being far beyond the capacity of our memory, we are obliged, in aid of that, to distribute them into masses, throwing into each of these all the individuals which have a certain degree of resemblance; to subdivide these again into smaller groups, according to certain points of dissimilitude observable in them, and so on until we have formed what we call a system of classes, orders, genera and species. In doing this, we fix arbitrarily on such characteristic resemblances and differences as seem to us most prominent and invariable in the several subjects, and most likely to take a strong hold in our memories.26

Devising the perfect classification system – impossible in any event -- was not nearly as important as having it commonly understood:

“The objection of bringing together what are disparata in nature, lies against the classifications of Blumenbach and of Cuvier, as well as that of Linnaeus, and must forever lie against all. . . . But this is not so important a consideration as that of uniting all nations under one language in Natural History. This had been happily effected by Linnaeus, and can scarcely be hoped for a second time.27

Jefferson was concerned that efforts by rival naturalists to supplant the Linnaean system would lead to the situation in which their disciples, “exclusively possessing their own nomenclatures, can no longer communicate intelligibly with one another”28:

“However much, therefore, we are indebted to [Blumenbach and Cuvier], and to Cuvier especially, for the valuable additions they have made to the sciences of nature, I cannot say they have rendered her a service in this attempt to innovate in the settled nomenclature of her productions; on the contrary, I think it will be a check on the progress of science, greater or less, in proportion as their schemes shall more or less prevail. They would have rendered greater

26 Id.

27 Id.

28 Id.
service by holding fast to the system on which we had once all agreed, and by inserting into that such new genera, orders, or even classes, as new discoveries should call for.

“I am not myself apt to be alarmed at innovations recommended by reason. That dread belongs to those whose interests or prejudices shrink from the advance of truth and science. My reluctance is to give up an universal language of which we are in possession, without an assurance of general consent to receive another. And the higher the character of the authors recommending it, and the more excellent what they offer, the greater the danger of producing schism.”

Neology (and its Enemies)

In one of the last letters he was to write, he paused to comment on efforts underway to publish “the county dialects of England”:

“It is much to be wished that [this work] should go on. It will restore to us our language in all its shades of variation. It will incorporate into the present one all the riches of our ancient dialects; and what a store this will be may be may be seen by running the eye over the county glossaries, and observing the words we have lost by abandonment and disuse, which in sound and sense are inferior to nothing we have retained. When these local vocabularies are published and digested together into a single one, it is probable we

29 Id. Just such a schism was taking place among the chemists:

“A particular set of them [in France] have undertaken to remodel all the terms of the science, and to give to every substance a new name, the composition, and especially the termination of which, shall define the relation in which it stands to other substances of the same family. But the science seems too much in its infancy as yet, for this reformation; because, in fact, the reformation of this year must be reformed again the next year, and so on, changing the names of substances as often as new experiments develop properties in them undiscovered before. The new nomenclature has, accordingly, been already proved to need numerous and important re formations. Probably it will not prevail. It is espoused by the minority only here, and by very few, indeed, of the foreign chemists. It is particularly rejected in England.


30 Neology, n. The introduction or use of new words or new senses of words. Webster’s Third International Dictionary.
shall find that there is not a word in Shakespeare which is not now in use in some of the counties in England, from whence we may obtain its true sense."

It was not just the thrill of fossil-hunting, the excitement of discovering dormant forms of speech. “I am not,” he continued, “merely an enthusiast for Palaeology [but] equally a friend to the encouragement of a judicious neology.”

“I am no friend to what is called Purism, but a zealous one to the Neology which has introduced these two words [i.e., “purism” and “neology”] without the authority of any dictionary. I consider the one as destroying the nerve and beauty of language, while the other improves both, [and] is the only way to give to a language copiousness and euphony. Without it we should still be held to the vocabulary of Alfred or of Ulphilas; and held to their state

31 Jefferson to J. Evelyn Denison, M.P,11.9.1825. And, speaking of Shakespeare, if we could get closer to the language that he had actually spoken, we could “exchange . . . the volumes of idle commentaries and conjectures with which that divine poet has been masked” [and] we shall find in him new sublimities which we had never tasted before, and find beauties in our [other] ancient poets which are lost to us now.” Id.

32 Regarding Anglo-Saxon, Jefferson wrote:

“I learn from you with great pleasure, that a taste is reviving in England for the recovery of the Anglo-Saxon dialect of our language; for a mere dialect it is, . . . Anglo-Saxon is only the earliest we possess of the many shades of mutation by which the language has tapered down to its modern form. Vocabularies we need for each of these stages . . .

Jefferson to J. Evelyn Denison, M.P,11.9.1825. While acknowledging his debt to the “worthies who have preserved the Anglo-Saxon form” without whose efforts “the dialect would by this time have been irrecoverably lost,” Jefferson proclaimed it a “misfortune” that the “learned apparatus in which [these scholars] have muffled our Anglo-Saxon [had] frightened us from encountering it.” The scholars had

“. . . endeavored to give Anglo-Saxon too much of a learned form, to mount it on all the scaffolding of the Greek and Latin, to load it with their genders, numbers, cases, declensions, conjugations, etc. Strip it of these embarrassments, vest it in the Roman type which we have adopted instead of our English black letter, reform its uncouth orthography, and assimilate its pronunciation, as much as may be, to the present English, just as we do in reading Piers Plowman or Chaucer, and with the contemporary vocabulary for the few lost words, we understand it as we do them.

Id.
of science also; for I am sure they had no words which
could have conveyed the ideas of oxigen (sic), cotyledons,
zoophytes, magnetism, electricity, hyaline, and thousands
of others expressing ideas not then existing . . .”33

He practiced what he preached; this “zealous friend to Neology” was himself a
Neologist of the highest rank. A search through the Oxford English Dictionary lists over
60 words for which Jefferson is the first recorded user – including such beauties as
Anglophobia, authentication, belittle, bibliograph, catenary, countervailing, doll-baby,
indecipherable, inheritability, post-note, public relations, reticulate, sanction, and vomit-
grass.34

33 Jefferson to John Waldo, 8.16.1813; Jefferson to Adams, 8.15.1820.

34 The complete list of Jeffersonian neologisms (as recorded by the OED) is as follows:

amovability
Angloman
Anglomania
Anglophobia
authentication
belittle
bibliograph
Bonapartism
bountied
bread-stuff
catenary
circumambulator
countervailing
discordable
doll-baby
drayage
enregistry
indecipherable
inheritability
intercoloniation
non-intercourse
palinodial
plexi-chronometer
post-note
public relations
retard
reticulate
sanction
snowberry
tolerablish
unconciliatory
and vomit-grass

See http://etext.virginia.edu/jefferson/oed/.
A language, he wrote, “cannot be too rich. The more copious, the more susceptible of embellishment it will become.” Today we’d call it “positive feedback” (a term not in use in Jefferson’s time): the more language is embellished, the more susceptible it becomes to embellishment; the more it grows, the more it can grow, and so on. The paradigm was ancient Greek, a language Jefferson considered the most “ductile and copious” of all because it was “modifiable almost ad infinitum”:

Their rule was that whenever their language furnished or adopted a root, all its branches, in every part of speech, were legitimated by giving them their appropriate terminations. {adelphos} ["brother"], {adelphe} ["sister"], {adelphidion} ["little brother"], {adelphotes} ["brotherly affection"], {adelphixis} ["brotherhood"], {adelphidoys} ["nephew"], {adelphikos} ["brotherly, adj."], {adelphizo} ["to adopt as a brother"], {adelphikos} ["brotherly," adv.]. And this should be the law of every language. Thus, having adopted the adjective fraternal, it is a root which should legitimate fraternity, fraternation, fraternisation, fraternism, to fraternate, fraternise, fraternally. And give the word neologism to our language, as a root, and it should give us its fellow substantives, neology, neologist, neologisation; its adjectives, neologous, neological, neologistical; its verb, neologise; and adverb, neologically.

Proclaiming oneself a “friend to neology” hardly seems particularly noteworthy – who, after all, is an enemy of new words? It seems like another of Jefferson’s quaint intellectual quirks, one of the weird windmills against which he spent so much of his time tilting.

Interestingly, Jefferson is (according to the OED) the first and last user of four of the words on the above list – Angloman, enregistry, intercolonnation, and plexi-chronometer. He would have been particularly disappointed, one suspects, that “Angloman” didn’t catch on – he used it (incessantly) to describe those (like the Arch-Fiend, Alexander Hamilton) in the iron grip of English customs and English ways of thinking.

35 Jefferson to Denison, supra note [ ].

36 Languages appear to share this positive feedback growth characteristic with an astounding number of other growth processes – the way trees grow, for example, and cities, and organic molecules. But more on that later.
But the propriety of introducing new words and new usages into the language “without the authority of any dictionary” was actually a most controversial issue in the intellectual life of the 18th and early 19th centuries. Neologisms, after all, are the natural enemy of interoperability; with all too many neologists neologistically neologizing, how are we going to continue to understand one another? And neology actually did have its enemies—eminently ones, at that.

“I am not a little disappointed, and made suspicious of my own judgment, on seeing the Edinburgh Reviews, the ablest critics of the age, set their faces against the introduction of new words into the English language. They are particularly apprehensive that the writers of the United States will adulterate it.”

Development of that most characteristic 18th century work – the “dictionary” – was impelled precisely by the desire to “fix” the language in its then-current form, to constrain its development within prescribed and orderly bounds. The Academie Francaise, an institution Jefferson knew well from his years in France, was the most obvious manifestation of this point of view, its avowed goal, as Jefferson put it, to “arrest the progress of their language by fixing it to a Dictionary, out of which no word was ever to be sought, used, or tolerated.”

37 Jefferson to John Waldo, supra, note [ ].


39 The Academie Francaise began as an informal coterie of literary men who met in Paris in the early 1630s to discuss rhetoric and criticism. Recognized by Cardinal Richelieu, the academy received a royal patent in 1635. Its aims included chiefly the governance of French literary effort, grammar, orthography, and rhetoric. The membership, fixed at 40 (the so-called “forty immortals”) was established as self-perpetuating, with a veto of elections reserved to the official protecteur (or patron), later to the state. The first notable act of the Academie was the criticism of Pierre Corneille’s Le Cid. King Louis XIV became “protecteur” of the Academie in 1672, and thereafter the position remained a prerogative of the head of the French State. The suppression of the academies in 1793 ended the French Academy; it reappeared as part
his magisterial *Dictionary of the English Language* with “the prospect of fixing our
language” in full view, and he even “flattered himself for a while,” that he would succeed
in that effort (though he later came to the realization that this was an “expectation which
neither reason nor experience could justify”; language being “the work of man, a being
from whom permanence and stability cannot be derived,” the *Dictionary* could at most
only “curb the lust for innovation.”).

But in a Jeffersonian world, curb the “lust for innovation” in language and you
destroy its beauty and its utility. Writing to John Adams about the use of a particular
neologism in a review of Jefferson’s plans for establishing the University of Virginia--
the word “location,” which, oddly enough, seemed to be a new word in the late 18th
century40 -- Jefferson wrote:

> For this word *Location*, see [the Dictionaries of ] Bailey, 
> Johnson, Sheridan, Walker, etc. But if dictionaries are to be
> the arbiters of language, in which of them shall we find *neologism* ? No matter. It is a good word, well sounding,
> obvious, and expresses an idea which would otherwise
> require circumlocution. The Reviewer was justifiable (*sic*),
> therefore, in using it; although he noted . . . as
> ‘unauthoritative’ [the words] *centrality, grade, sparse*; all
> which have been long used in common speech and writing.

Dictionaries are but the depositories of words already
legitimated by usage. Society is the workshop in which new
ones are elaborated. When an individual uses a new word,
if ill formed, it is rejected in society; if well formed,
adopted, and after due time, laid up in the depository of
dictionaries. 41

---

40 The reviewer had been commenting upon the “location” of certain subjects – military and naval
architecture – within the curriculum for “Pure Mathematics.” The OED indicates that the word “location”
was first used in this sense (“The fact or condition of occupying a particular place; local position, situation.
Also, position in a series or succession”) in 1632.

41 Jefferson to Adams, 8.15.1820. He went on:
And nowhere would we more need a “ductile and copious” language than in the New World, where new circumstances, new knowledge, new forms of social organization, required new words, new dialects, and new languages.⁴²

*Necessity obliges us to neologize. . . . The new circumstances under which we are placed, call for new words, new phrases, and for the transfer of old words to new objects. . . .* Certainly so great growing a population, spread over such an extent of country, with such a variety of climates, of productions, of arts, must enlarge their language, to make it answer its purpose of expressing all ideas, the new as well as the old.⁴³

“If, in this process of sound neologisation, our trans-Atlantic brethren shall not choose to accompany us, we may furnish, after the Ionians, a second example of a colonial dialect improving on its primitive. . . . Should the language of England continue stationary, we shall probably enlarge our employment of it, until its new character may separate it in name as well as in power, from the mother-tongue.”

*Id.*

⁴² Jefferson described a wonderful example from revolutionary France that had impressed itself on his mind during his visit there in the early 1790s; just as the English had created “legal French” during the 13th through 16th centuries, the French had needed, and had created, a kind of “anglais parlementaire”:

“The institution of parliamentary assemblies in [France in] 1789, for which their language had no apposite terms or phrases (as having never before needed them) first obliged them to adopt the Parliamentary vocabulary of England. . . . [O]ther new circumstances called for corresponding new words; until by the number of these adopted, and by the analogies for adoption which they have legitimated, I think we may say with truth that a Dictionaire Neologique of these would be half as large as the dictionary of the Academy . . .”

The French, Jefferson happily noted, had seen the error of their ways: In 1793 they did away with the Academy’s royal charter and its control by the State, and

“. . . what a language has the French become since the date of their revolution, by the free introduction of new words! The most copious and eloquent in the living world . . . at this time it is the language in which every shade of idea, distinctly perceived by the mind, may be more exactly expressed, than in any language at this day spoken by man.

⁴³ Some forty years later, Walt Whitman thought the effort had been a successful one:
These were, he concluded, his “visions on the improvement of the English language by a free use of its faculties.”

An American dialect will be formed; so will a West-Indian and Asiatic, as a Scotch and an Irish are already formed. . . . Will these adulterate, or enrich, the English language? Has the beautiful poetry of Burns, or his Scottish dialect, disfigured it? Did the Athenians consider the Doric, the Ionian, the Aeolic, and other dialects, as disfiguring or as beautifying their language? Did they fastidiously disavow Herodotus, Pindar, Theocritus, Sappho, Alcaeus, or Grecian writers? On the contrary, they were sensible that the variety of dialects, still infinitely varied by poetical license, constituted the riches of their language, and made the Grecian Homer the first of poets, as he must ever remain, until a language equally ductile and copious shall again be spoken. . . .

To realize these visions would, to be sure, “require a course of time”:

“The example of good writers, the approbation of men of letters, the judgment of sound critics, and of none more than of the Edinburgh Reviewers, would give it a beginning, and once begun, its progress might be as rapid as it has been in France, where we see what a period of only twenty years has effected.¹ Under the auspices of British science and example it might commence with hope. But the dread of innovation there, and especially of any example set by France, has, I fear, palsied the spirit of improvement. But here, where all is new, no innovation is feared which offers good. . . .

“I have no hesitation in saying that the English language is . . . capable, with the freedom of employing its materials, of becoming superior to [French] in copiousness and euphony.

“The English language befriends the grand American expression . . . it is brawny enough and limber and full enough. On the tough stock of a race who through all change of circumstance was never without the idea of political liberty, which is the animus of all liberty, it has attracted the terms of daintier and gayer and subtler and more elegant tongues. It is the powerful language of resistance . . . it is the dialect of common sense. It is the speech of the proud and melancholy races and of all who aspire. It is the chosen tongue to express growth faith self-esteem freedom justice equality friendliness amplitude prudence decision and courage. It is the medium that shall well nigh express the inexpressible.

Its enlargement must be the consequence, to a certain degree, of its transplantation from the latitude of London into every climate of the globe; and the greater the degree[of enlargement] the more precious will it become as the organ of the development of the human mind. Not by holding fast to Johnson's Dictionary; not by raising a hue and cry against every word he has not licensed; but by encouraging and welcoming new compositions of its elements . . .”

**Cyberspace**

What does all of this tell us? It tells me that the debate about the need for control over the development of language has a long and distinguished pedigree. That we, too, need new dialects for new circumstances. That language, like nature, “branches at every turn” (if we let it). That the open source software movement is not merely intriguing, but likely to produce better software than processes relying on proprietary control. That Esperanto, like OSI, is not sufficiently ductile and copious to serve as a universal language because the processes of neologizing were not adequate for the task. That if people choose to talk SDMI, I’m not sure why I should object.

And that we might not need ICANN at all. When the Commerce Department was considering its options upon expiration of its contract with NSI, nobody, as far as I could tell, took seriously the idea that it should do what it ordinarily does when a contract

---


45 OSI stands for the Open System Interconnection protocols, designed by the Europeans to serve as the language for interconnecting the world’s computers, i.e., to do what TCP/IP does (and, apparently, does better – at least, it has attracted more speakers).

46 James Scott, in Seeing Like a State, discussing Tanzania’s disastrous “villagization” initiatives, writes that “the 'thinness' of artificially designed communities can be compared to the thinness of artificially designed languages like Esperanto,” which has “none of the resonances, connotations, ready metaphors, literature, oral history, idioms, and traditions of practical use that any socially embedded language has.”

47 SDMI stands for the Secure Digital Music Initiative, one of the many technological schemes – codes – proposed for the protection of copyrighted information.
expired: break out the champagne, shake hands, and walk away. Too much was at stake, we were told, the Internet had gotten too big, too important, too valuable, too ‘mission-critical,’ to permit it to descend into the chaos that would somehow inevitably follow the government’s withdrawal from the scene. According to the Commerce Department’s Statement of Policy:

“Management of number addresses is best done on a coordinated basis. Internet numbers are a unique, and at least currently, a limited resource. As technology evolves, changes may be needed in the number allocation system. These changes should also be coordinated. Similarly, coordination of the root server network is necessary if the whole system is to work smoothly. While day-to-day operational tasks, such as the actual operation and maintenance of the Internet root servers, can be dispersed, overall policy guidance and control of the TLDs and the Internet root server system should be vested in a single organization that is representative of Internet users around the globe.

The U.S. Government should end its role in the Internet number and name address system in a manner that ensures the stability of the Internet. The introduction of a new management system should not disrupt current operations or create competing root systems. During the transition and thereafter, the stability of the Internet should be the first priority of any DNS management system. Security and reliability of the DNS are important aspects of stability, and as a new DNS management system is introduced, a comprehensive security strategy should be developed.\(^{48}\)

I suppose the ICANN experiment has been a success. The Internet, as far as I can tell, has continued to be “stable.” But stability comes at a price; if it is our highest priority, the price will be a high one. I can’t quite understand why we need ICANN any more than we needed the Academie Francaise. Though I am rarely accused of downplaying the significance of the Internet, it is not bigger, or more important, or more valuable, or more ‘mission-critical,’ than the languages we speak. This bit of

code/architecture – the language of the DNS – will lose its copiousness and euphony if we are not careful. Or, rather, if we are too careful. Lon Fuller spoke of the law

“act[ing]as a gardener who prunes an imperfectly growing tree in order to help the tree realize its own capacity for perfection. This can occur only when all concerned genuinely want the tree to grow and to grow properly. Our task is to make them want this.”

If we want the DNS tree to “realize its own capacity for perfection” we may need to think more about, and appreciate more, why it grows at all, and how it grows, and how it might grow most luxuriantly.